SYSTEM

OF

UNIVERSAL GEOGRAPHY;

FOUNDED ON THE WORKS OF

MALTE-BRUN AND BALBI;

EMBRACING

THE HISTORY OF GEOGRAPHICAL DISCOVERY,
THE PRINCIPLES OF MATHEMATICAL AND PHYSICAL GEOGRAPHY,
AND A COMPLETE DESCRIPTION, FROM THE MOST RECENT SOURCES,
OF ALL THE COUNTRIES OF THE WORLD.

A NEW EDITION, REVISED AND CORRECTED THROUGHOUT.

WITH ALPHABETICAL INDICES OF 13,500 NAMES.

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PREFACE.

When the Publishers of the present Work had completed the English Translation of Malte-Brun's Geography, in nine volumes octavo, they were repeatedly urged to publish an abridgment of it in a single volume. With this view they engaged the services of several writers, whose talents and studies peculiarly fitted them for the departments respectively allotted to them; while the whole work was, at the same time, placed under the care of a gentleman well qualified to undertake the general superintendence.

Before, however, much progress had been made in preparing the materials for the press, it was discovered that a mere abridgment of Malte-Brun's text would be very unsatisfactory; and the attention of the Editor having been directed to the second edition of Adrien Balbi's "Abrégé de Geographie," he was satisfied that the perspicuous and systematic arrangement of that book offered a better plan for the construction of the present volume. It has accordingly been adopted as the basis of this Work; which, however, is not so much an abridgment of the labours of these two celebrated Geographers, as an entirely new compilation, embodying information communicated by later writers, and not accessible at the time when the large work of Malte-Brun was published.

In reference to the authorship of the following Work:—the "Historical Sketch of the Progress of Geographical Discovery," which forms the First Chapter of the Introductory portion, was originally written by M. Larenaudiere, Editor of the French Abridgment of Malte-Brun's "Precis." It was translated by Robert Hamilton, M. D, and considerable modifications and additions to the present time, were made by Mr. Laurie. The Second Chapter, containing the "Principles of Mathematical Geography," was, with similar modifications and additions, translated from Malte-Brun's text, by Thomas Galloway, Esq., Secretary to the Royal Astronomical Society. "Physical Geography in relation to the Inorganic part of the Globe," which forms the subject of the Third Chapter, is from the pen of J. P. Nichol, LL.D., Professor of Astronomy in the University of Glasgow. The first Three Sections of the Fourth Chapter were written by John H. Balfour, M.D., Professor of Botany in the University of Edinburgh; and the remaining Section, as well as the first three Sections of the succeeding Chapter on Political Geography, were contributed principally by Mr. James Laurie. The General Description of Europe, and also the Statistics of England and Scotland, were compiled by Mr. Hugh Smith, under whose superintendence the early portion of the Work was placed. Mr. Alexander Rose, Lecturer on Mineralogy and Geology, furnished materials for the Geological Notices of England, Scotland, and France. The remainder of the volume

was written by Mr. James Laurie, and conducted by him as general Editor to its completion.

The object kept in view throughout has been to produce a Work on Geography which would be generally useful. The Contributors conceived it to be no part of their business as Geographers to give minute descriptions and long classified lists of the various objects of Natural History. All that they deemed it necessary to do in this respect, was to give those general views of Natural Science connected with Geography which will be found in the Introduction; while, in the body of the work, they have confined themselves, with very few exceptions, to short notices of such objects of Natural History as are conducive to the subsistence and the comfort of man, or to the promotion of national industry and the useful arts—objects, in short, the nature of which all can understand and appreciate. As a book of reference, its value will be understood at once from the simple fact, that the principal Index contains a much larger number of names than is to be found in any English Gazetteer.

The sources from which the Work has been compiled are generally indicated in their proper places throughout the volume. The writers have stated nothing but on what they conceived to be good authority, though in many cases they have found the authorities so perplexingly at variance as to make it extremely difficult to determine which ought to be followed.

They have not allowed themselves to indulge in those moral, economical, and political speculations, with which some Geographers largely intersperse their works, conceiving that the space necessary for these may be much better employed in the statement of facts, from which the readers may draw inferences for themselves. They have confined themselves to such subjects as they considered within their legitimate province, and such as are calculated to be useful to the great bulk of the reading Public. With this view, particular attention has been directed to the Sections embracing the British Islands, and the principal British Colonial Possessions, which, in addition to the strictly Geographical details, will be found to contain a larger amount of statistical information connected with their natural productions, commerce, and manufactures, than has yet appeared in any work of the same size. To facilitate the conversion of Foreign Weights and Measures into the British standard, part of an able article on that subject, from the Seventh Edition of the Encyclopædia Britannica, has been prefixed to the Work.

No pains have been spared to procure the latest and most correct accounts of the various countries of the world. The most recent books of travels have been consulted, and due advantage has been taken of the Transactions of the Royal Geographical Society of London—the most valuable contributions which modern research has made to Geographical Science. In short, it is confidently hoped that, in respect of accuracy and extent of information, the present work will be found, at the least, not inferior to any similar publication.

CONTENTS.

INTRODUCTION.

DESCRIPTIVE GEOGRAPHY.

ASIA.

AFRICA.

AMERICA.

WEIGHTS AND MEASURES

USED IN GREAT BRITAIN AND IN FOREIGN COUNTRIES.

GREAT BRITAIN.—The following is a tabular view of the Weights and Measures according to the present state of the law, throughout the British empire. In some of the Colonies, however, and particularly in India, a variety of other weights and measures are still in use, which will be found under their proper heads. It is only necessary to observe, that all the quantities in the same horizontal line of the same table are equal to each other.

TROY WEIGHT.

Grains.	*Dwts.*	*Oz.*	*Lb.*
24	1	...	...
480	20	1	...
5760	240	12	1

APOTHECARIES' WEIGHT.

Troy Grains.	*Scruples.*	*Drams.*	*Oz.*	*Lb.*
20	1	...	...	...
60	3	1	...	...
480	24	8	1	...
5760	288	96	12	1

In these two weights the grain, the ounce, and pound are the same. The troy is used for the precious metals and for jewels, as also in trying the strength of spirituous liquors, and for comparing different weights with each other. Four grains troy make a carat. But this term when applied to gold denotes its degree of fineness. Thus, the weight of any quantity or compound of that metal being supposed to be divided into 24 equal parts, if the mass be pure gold, it is said to be 24 carats fine. If it consist of 23 parts of pure gold and 1 of alloy, it is said to be 23 carats fine, and so on. Diamonds and pearls are also weighed by carats of 4 grains, but 5 diamond grains are only equal to 4 troy grains. This sort of weight is not very different all over the globe. There are 150 diamond carats in the troy ounce. Apothecaries' weight is chiefly used for medical prescriptions; but drugs are mostly bought and sold, especially in wholesale, by avoirdupois weight.

AVOIRDUPOIS OR COMMERCIAL WEIGHT.

Troy Grains.	*Drams.*	*Oz.*	*Lb.*	*Stones.*	*Qrs.*	*Cwts.*	*Ton.*
437·5	16	1	...	...	...	...	...
7000	256	16	1	...	...	...	...
98000	3584	224	14	1	...	...	...
196000	7168	448	28	2	1	...	...
784000	28672	1792	112	8	4	1	...
15680000	573440	35840	2240	160	80	20	1

The above lb. of 7000 troy grains was formerly subdivided into 7680 avoirdupois grains, 10 of which made a scruple, 30 a dram, and 480 an ounce. The troy pound is less than the avoirdupois in the proportion of 144 to 175, or of 14 to 17 nearly; but the troy ounce is greater than the avoirdupois in the proportion of 192 to 175, or of 79 to 72 nearly.

MEASURES OF LENGTH.

Inches.	*Links.*	*Feet.*	*Yards.*	*Pole or Perch.*	*Chains.*	*Furlongs.*	*Mile.*
7·92	1	...	..	...	...	...	...
12	1·515	1	...	...	...	...	...
36	4·545	3	1	...	...	...	...
198	25	16·5	5·5	1	...	...	...
792	100	66	22	4	1	...	...
7920	1000	660	220	40	10	1	...
63360	8000	5280	1760	320	80	8	1

Three inches make a palm, 4 inches a hand, 5 feet a pace, and 6 feet a fathom. In cloth measure, $2\frac{1}{4}$ inches = 1 nail, 4 nails = 1 quarter, and 4 quarters = 1 yard.

MEASURES OF SURFACE.

Square Inches.	*Square Links.*	*Square Feet.*	*Square Yards.*	*Square Pole or Perch.*	*Square Chain.*	*Square Rood.*	*Acre.*
62·726	1	...	...	...		...	...
144	2·295	1	...	...		...	...
1296	20·661	9	1	...	...	...	...
39204	625	272·25	30·25	1	...	...	...
627264	10000	4356	484	16	1	...	...
1568160	25000	10890	1210	40	2·5	1	...
6272640	100000	43560	4840	160	10	4	1

In the superficial measurement of stone, brick, or slate work, 36 square yards are termed a rood, and 100 square feet of flooring a square. There are 1728 cubic inches in the cubic foot, and 27 cubic feet in the cubic yard; 40 cubic feet of rough, or 50 of hewn timber, make a load or ton. A cubic yard of earth is called a load.

IMPERIAL LIQUID AND DRY MEASURE,

Deduced from the Standard Gallon containing 10 lbs. avoirdupois of distilled water at the temperature of 62° Fahrenheit, and Barometer 30 inches.

Pounds of Water.	*Cubic Inches.*	*Gills.*	*Pints.*	*Quarts.*	*Pottles.*	*Gallons.*	*Pecks.*	*Bushels.*	*Coomb.*	*Quarter.*
1·25	34·659	4	1	...	...	...	...	...	...	...
2·5	69·318	8	2	1	...	...	...	...	...	...
5	138·637	16	4	2	1	...	...	...	...	...
10	277·274	32	8	4	2	1	...	...	...	...
20	554·548	64	16	8	4	2	1	...	...	...
80	2218·191	256	64	32	16	8	4	1	...	...
320	8872·763	1024	256	128	64	32	16	4	1	...
640	17745·526	2048	512	256	128	64	32	8	2	1

This measure came first into operation 1st January 1826, but has only been compulsory as the sole legal measure of capacity since 1st January 1836. The peck, bushel, coomb, and quarter are dry measures only.

FOREIGN.— In the following general comparison of the principal foreign weights and measures with the British, instead of the term *imperial*, which alone must be nearly unintelligible to foreigners, and indeed has become next to superfluous after every other standard has ceased to be legal in this country, we shall use the term *British* to denote such of the standards as are uniform, and *troy* and *avoirdupois* to express the two different kinds of weight respectively.

Algiers.— Since the French conquest, the metrical system and *système usuel* of France are generally used by European merchants. The metalli of oil = 37·375 lbs. avoirdupois; and 100 rotoli = 119 lbs. avoirdupois. The metical = 73 troy grains. The Turkish pic used for cloth = 24·5 British inches; but the Moorish pic is only three fourths as long; and 16 tarries = 1 caffise = 8·75 British bushels.

Arabia.—The weights and measures of Egypt are much used where the sway of Mehemet Ali has extended. Besides these, 200 rattles = 100 maunds = 10 frazils = 1 bahar = 222·5 lbs. avoird.

Argentine Republic.— Same as in Spain.

Austria.— Of the weights, 32 loths = 16 oz. = 4 quarters = 1 commercial lb.; and 100 lbs. = 1 centner = 123·56 lbs. avoird. Also 20 lbs. = 1 stone. The Vienna mark of 4333 grains troy is used for gold and silver. Five such marks make nearly 6 marks of Cologne. Of Vienna measures, 6 feet make one klafter or fathom = 6·23 Brit. feet; 1 ell = 30·6 Brit. inches; 4000 klaftern = 1 posting mile = 4·71 Brit. miles; and the joch = 6889 Brit. sq. yds. Also 70 kopfen = 40 masses = 4 viertels = 112·46 Brit. gall. Of wine, 32 eimers = 1 fuder; and 30 eimers = 1 dreyling. Eight achtels of corn = 4 viertels = 1 metzen = 1·69 Brit. bushel, and 30 metzen make 1 muth. At Trieste, the woollen ell = 26·6 Brit. inches; the silk ell = 25·22 Brit. inches; the eimer or orna of wine = 12·45 Brit. gallons; the barile = 144·5 Brit. gall. The orna of oil = 14·17 Brit. gall.; and the stajo of corn = 2·272 Brit. bushels. But sometimes the weights and measures of Venice are used here.

In public and official matters, the decimal system of France was in effect adopted, though under a different nomenclature, in the Austrian states of Italy in 1804. Thus

10,000 grani=1000 denari = 100 grossi=10 oncie = 1 libra nouva=1 kilogramme = 2·2086 lbs. avoird.; 1000 atomi = 100 ditti = 10 palmi = 1 metre = 39·3708 Brit. inches; and 1000 copi = 100 liti = 10 mine = 1 soma = 1 hectolitre = 2·7512 Brit. bushels. The decimal system is principally used in public affairs, the old weights and measures being in more general use for ordinary trade. In Milan, the mark = 3627 grains troy; the lb. peso grosso = 2·3343 lbs. sottile = 1·6818 lb. avoird.; and the oil rubio = 47·5 same lbs. The wine brenta = 15·72 Brit. gall.; the corn stajo = 2·008 Brit. pecks. In Venice, the lb. peso grosso = 1·0519 lb. avoird.; the lb. sottile = ·6643 lb. avoird.; and the mark = 3681·5 grs. troy. The woollen braccio = 26·6 Brit. inches; the silk braccio = 248 same inches; the wine secchio = 2·376 Brit. gall.; the oil miro = 3·354 Brit. gall.; and the corn stajo = 2·20 Brit. bushels.

Australia.—Same as in Britain.

Baden.—One hundred lbs. = 10 stones = 1 centner = 50 kilogrammes = 110·2429 lbs., avoird. There are 2 feet in the new aune = 6 decimetres = 23.62 Brit. inches. The morgen of land = 36 French ares = ·8896 Brit. acre. Also 150 litres = 1 ohm = 33·015 Brit. gallons; and 20 malters of corn = 1 last = 30 hectolitres = 10·32 Brit. quarters.

Bavaria.—The centner or quintal = 100 lbs. = 5 stones = 56 kilogrammes = 123·5 lbs. avoird. Gold and silver are weighed by the Cologne mark of 3608 troy grains. The ell = 32·8 British inches; the eimer of wine = 60 maas = 8·12 Brit. gallons; and 12 viertels = 6 metzen = 1 sheffel = 9·98 Brit. bushels. In the old system of Augsburg, 100 lbs. heavy weight = 108·3 lbs. avoird.; and 100 lbs. light weight = 104·23 lbs. avoird. The mark = 3643 troy grains, and is divided into 16 loths = 64 quintins.

Belgium.—In 1820, this country and Holland being under one government, the French metrical system was introduced into both, but with the old Dutch nomenclature, as follows. Ten korrels = 1 wigtje = 1 gramme = 15·434 troy grains; and 1000 wigtjes = 100 loods = 10 ons = 1 pond = 1 kilogramme = 2·20486 lbs. avoird. The apothecaries' new pound is divided into 12 oz. = 96 drams = 288 scruples = 5760 grains = 5787 grains troy. Ten palms = 1 elle = 1 metre = 39·3708 Brit. inches; also 1 mijle = 1 kilometre = 1093·633 Brit. yds.; and 100 square elles = 10 sq. roedes = 1 sq. bunder = 1 are = 119·6033 Brit. sq. yds. The cubic elle = 1 stère = 1·30802 Brit. cubic yd.; and 100 vingerhoeds = 10 maatjes = 1 kan = 1 litre; and 100 kans = 1 vat liquid measure = 1 hectolitre = 22·009 Brit. gallons. Also 100 kops = 10 schepels = 1 mudde or zak dry measure = 1 hectolitre = ·3439 British quarter.

Of the old systems still partially in use in many places, the Brabant lb. = 1·0335 lb. avoird.; the ell = 27·58 Brit. inches; and the league = 6076 Brit. yds. The aam of 50 stoops = 32·4 Brit. gallons; the velte = 4·1. Brit. gall.; and 37·5 viertels = 1 last = 82 Brit. bushels. The Antwerp silk ell = 27 32 Brit. inches, and the woollen ell = 26 97 of same inches.

Brazil.—In general the same as in Portugal. But in trade the following are also in use. The lb., of which 99 = 100 lbs. avoird. Five varas = 6 British yds.; and 4 covadoes = 3 Brit. yds. The medida of Rio Janeiro, of which 100 = 61.1 Brit gall.; and 12 alqueires = 12·86 Brit. bushels. The canada of Bahia = 1·667 Brit. gall.; and 7 alqueires = 5.817 Brit. bushels. The alqueire of Maranham = 1·11 Brit. bushel.

Bremen.—The lb. consists of 16 ounces, and the lispond of 14 such lbs., of which 116 = 1 centner = 127·44 lbs. avoird. Hence 10 lbs. of Bremen make nearly 11 avoird. The Cologne mark is used for gold and silver. The ell of 2 feet = 22·76 Brit. inches. and 180 quarts = 45 stubchens = 20 viertiels = 1 ahm = 31·5 Brit. gallons. Six ahms = 1 fuder of Rhenish wine, and 44 stubchens = 1 ahm of French wine In corn measure, 640 spinets = 160 viertels = 40 scheffels = 4 quarts = 1 last = 9·77 British quarters.

Brunswick.—The centner consists of 114 lbs., and 100 lbs. = 103 lbs. avoird. Two feet = 1 ell = 22·46 Brit. inches. Forty stubgens = 1 wine ahm = 32.28 Brit. gall. Forty himtens of corn = 4 scheffels = 1 wispel = 34·2 Brit. bushels.

Buenos Ayres.—The same as in Spain.

Burman Empire.—Most commodities are bought and sold by weight. Of rice, 64 sales = 16 vis = 4 saits = 1 ten or basket = 57·36 lbs. avoird., but generally reckoned at half a cwt. Other grain, pulse, fruit, salt, and also lime, are measured. One hundred kaits = 1 vis or paiktha = 3·59 lbs. avoird.; and 150 vis = 1 candy = 500 lbs. avoird.

Canada.—The same as in Britain, except that the old English measures of capacity are still partially used, as also the old French minot = 1·0556 Brit. bushel; or 45 minots = 49 Winchester bushels, though commonly reckoned at 50.

Canary Isles.—The same as in Spain; but in the corn trade, 4·5 fanegas of wheat or barley, and 3·167 of maize or Indian corn, are reckoned to the Winchester quarter.

Candia.—The oke = 2·75 lbs. avoird., and the quintal = 126 of same lbs. The ell or pik = 25·11 Brit. inches; the dennum measure of surface = 40 sq. yds. The mistach is a variable measure of wine from 3 to 5 Brit. gall.; that of oil is more nearly 3 gall. Corn is measured by the carga = 4·19 Brit. bushels.

Cape of Good Hope.—The Dutch standards, which were formerly used here, have now in a great measure been superseded by the British. One hundred Dutch lbs. = 108·923 lbs. avoird. The muid of wheat weighs about 110 lbs. Dutch, or fully 119·6 avoird.; and 100 Dutch ells = 75·47 Brit. yds.; also 100 morgen = 201 Brit. acres. In corn measure, 4 schepels = 1 mudde or muid = 3·06 Brit. bushels; and 4 ahms = 1 leaguer = 126·63 British gallons.

Ceylon.—For foreign commodities, the British weights are generally employed. The candy or bahar = 500 lbs. avoird.; and the garce = 82 cwts. 2 qrs. 16·5 lbs. The bale of cinnamon = 92½ lbs. avoird. Of the native measures, 192 seers = 8 parrahs = 1 amomam = 5·57 Brit. bushels; the last of corn = 6·54 Brit. quarters; and 300 canadas = 75 welts = 1 leaguer in the retail of arrack = 125 Brit. gall.; but in wholesale, the leaguer of arrack = 80 welts. Besides the British standards of length and surface, 40 coornies in the land measure of Kandi = 4 peylas = 1 amomam = 2·7344 Brit. acres.

Chili.—In general the same as in Spain. But 24 lbs. of Chili = 25 of Spain = 25·36 lbs. avoird., and 27 varas = 25 British yards.

China.—Liquids and grain are bought and sold by weight, of which 1000 cash = 100 candereens = 10 mace = 1 tael = 583·33 grains troy; and 1600 taels = 100 catties 1 pecul = 133·33 lbs. avoird.; so that three peculs = 400 lbs., 84 catties = 1 cwt., and 12 taels = 1 lb. But in money weight, the tael is about 3·5 grains less. Of the measures, 10 punts = 1 covid = 14·625 Brit. inches; or 32 covids = 13 Brit. yds. The li = 180 fathoms = 632 Brit. yds., and 200 lis = 1 degree of the meridian.

Corsica.—In general the same as in France. At Bastia, the stago of corn = 4·125 Brit. bushels, and the barile of wine = 30·8 Brit. gallons.

Cuba.—Generally the same as in Spain. The following are also used in trade: 100 lbs. = 4 arrobas = 1 quintal = 101·75 lbs. avoird. The vara = 33·333 Brit. inches; the fanega = 2·9 Brit. bushels; the arroba for wine or spirits = 3·42 Brit. gallons.

Denmark.—Of the weights, 320 lbs. = 20 lisponds = 1 shippond = 3·143 British cwts.; and 100 lbs. = 1 centner = 110·25 lbs. avoird. Gold and silver are weighed by the Copenhagen mark of 8 ounces = 3633 grains troy. Two Rhinland feet = 1 ell = 24·75 Brit. inches; and 2400 ruthes = 1 mile = 4·684 Brit. miles. Eight pots = 4 kans = 1 viertel = 1·7 Brit. gall.; 30 viertels = 1 hogshead = 51 Brit. gall.; 4 ankers = 1 ahm = 33·25 Brit. gall.; and 144 pots = 8 skieps = 1 barrel or toende = 3·83 Brit. bushels. Also 12 barrels = 1 last of corn = 5·739 Brit. quarters.

Egypt.—Of the weights, 144 dirhems = 12 oockeeyehs = 1 lb. or rutl = 15·75 oz. avoird.; and 400 dirhems = 1 oke or oockckah = 2·78 rutls = 2·75 lbs. avoird. Also 100 rutls = 1 cantâr or ckuntar, from 98 to 99 lbs. avoird. The common cubit = 22·667 Brit. inches; the cubit used for Indian goods = 25 Brit. inches; the cubit of Constantinople used for European cloth = 26·5 Brit. inches. Of corn measure, 24 roobas = 6 weybehs = 1 ardeb = 4·847. Brit. bushels. But various other weights and measures are to be found in some parts of Egypt.

France.—The metrical system, whose multiples and subdivisions all proceed decimally, was instituted in 1795, and is founded upon the dimensions of the earth: the ten millionth part of the meridian arc between the pole and equator, being denominated a *mètre*, forms the unit of length. The other units, all derived from it, are—1*st*, that of surface, the *are;* 2*d*, of solidity, the *stère;* 3*d*, of capacity, the *litre;* and, 4*th*, of weight, the *gramme.* The Latin derivatives *deci* to denote the tenth part, *centi* the hundredth, and *milli* the thousandth part, being prefixed to any of these units, serve to denominate its decimal subdivisions; while the sort of Greek derivatives, *deca* to denote ten times, *hecto* an hundred, *kilo* a thousand, and *myria* ten thousand times, being prefixed, express its decimal multiplies. Thus, a decimetre means the tenth of a metre, and a decametre is 10 metres.

The metre is equal to 10 decimetres = 100 centimetres = 1000 millimetres = 1·093633 Brit. yard, or 39·37079 Brit. inches; and 32 metres = 35 Brit. yards nearly. Also 1000 metres = 100 decametres = 10 hectometres = 1 kilometre or metrical mile = 3280·899 Brit. feet = 1093·633 yards, or nearly 5 furlongs.

The are or metrical perch, consisting of 100 square metres, = 10 deciares = 103 centiares = 119·6033 Brit. sq. yards. Also 100 ares = 10 decares = 1 hectare = 2·471140 Brit. acres; and 17 hectares are nearly equal to 42 Brit. acres.

The stere or cubic metre = 10 decisteres = 1·308022 Brit. cubic yard; and 10 steres = 1 decastere.

The litre or cubic decimetre = 10 decilitres = 100 centilitres = 61·027052 Brit. cubic inches; and 50 litres are nearly 11 Brit. gallons. Also 100 litres = 10 decalitres = 1 hectolitre = 2·751207 Brit. bushels; and 32 hectolitres are nearly equal to 11 Brit. quarters, and 100 hectolitres = 10 kilolitres or cubic metres = 1 myrialitre = 34·390086 Brit. quarters.

The gramme is a weight equal that of 1 cubic centimetre of water at its maximum density. It contains 10 decigrammes = 100 centigrammes = 15·434 troy grains; and 1000 grammes = 100 decagrammes = 10 hectogrammes = 1 kilogramme = 2·679514 lbs. troy = 2·204857 lbs. avoird. Also 100 kilogrammes = 10 myriagrammes = 1 metrical quintal = 220·486 lbs. avoird.; and 10 quintals = weight of a cubic metre of water = 1 millier or marineton = 19 Brit. cwt. 2 qrs. 20 lbs. 13·75 oz.

The *Système Usuel*, or Binary System of the French, was introduced in 1812, for the accommodation of retail trade, to make a sort of compromise with the common people, who shewed an irreconcileable aversion to the innovations of the metrical or decimal system. It has the metrical standards for its basis; but their divisions, &c. instead of being decimal, are chiefly binary, that is, they proceed principally by continually halving or doubling some of these standards, though partly according to other divisions of the old system; and instead of the metrical vocabulary, the names of ancient weights and measures are employed, annexing the term *usuel* to each. Thus, the toise usuel = 2 metres = 78·74158 Brit. inches. The pied usuel is one sixth of the toise, and is subdivided into twelfths or inches, &c. The aune usuelle = 12 decimetres = 1·2 metre = 47·2449 Brit. inches. The litron usuel = 1 litre = 1·7608 Brit. pint. The Boisseau usuel is one eighth of the hectolitre, and = 2·7512 Brit. gallons. The livre usuelle is half the kilogramme, and = 1·10243 lb. avoird. The halves, quarters, eighths, &c. of the most of the above are also in use.

Frankfort on the Maine. — Of the weights, 128 drachmes = 32 loths = 2 marks = 1 heavy lb. = 1·1143 lb. avoird. The light lb. is similarly divided, but only = 1.0318 lb. avoird., so that 108 of the light lbs. make only 100 of the heavy or centner weight. The Cologne mark, here reckoned = 3611 grains troy, is used for gold and silver. The Frankfort foot contains 11·42 Brit. inches, and the ell 21·54. The Brabant ell is generally used for Dutch goods, and the Paris aune for French. Eighty old or 90 new mass (each of 4 schoppen) are equal to 20 viertels = 1 ohm = 31·57 Brit. gall.; and 16 sechters = 8 metzen = 4 simmers = 1 malter or achtel = 3·16 Brit bushels.

Genoa. — There are two sorts of pounds, the peso sottile lb., and the peso grosso lb. The latter is a tenth part heavier than the former, so that the cantaro of 100 lbs. peso sottile = 69·89 lbs. avoird., and the cantaro of 100 lbs. peso grosso = 76·88. The latter is used for bulky commodities, and the former for gold, silver, and all articles of small bulk. The palmo = 9·725 Brit. inches, and 2·333 palmi = 1 braccio. The canna is of three sorts: the canna piccola used by tradesmen = 9 palmi, the canna grossa of the merchants = 12 palmi, and the custom-house canna = 10 palmi. Of corn measure, 96 gombette = 8 quarti = 1 mina = 3.31 Brit. bushels. Also 100 pints = 2 barili = 1 mezzarola of wine = 32·67 Brit. gall.; and 64 quateroni = 4 quarti = 1 oil barile = 14·23 Brit. gall.

Germany. — Considerable diversity of weights and measures is to be found in the various states into which this extensive country is divided, and the most important of them will be found noticed separately. But not a few of their standards, though differing in amount, are similar in their multiples and subdivisions. Of the weights, 1024 hellers = 312 pfennings = 128 quentins = 32 loths = 16 ounces = 2 marks = 1 commercial lb.; and 5760 grains = 288 scruples = 96 drams = 12 oz. = 1 apothecaries' lb.; also 4352 eschen = 512 hellers = 256 pfennigs = 64 quentins = 16 loths = 8 oz. = 1 Cologne mark = 3608 grains troy. By this gold and silver are weighed; and the fineness of gold is expressed by 24th parts or carats as in Britain, but the fineness of silver by 16th parts. For jewellery there is a carat of 3·171 grs. troy. Of the measures, 144 inches = 12 feet = 6 ells = 2 clafters = 4 ruthe. The Rhinland foot used by surveyors = 12·36 Brit. inches; the long mile = 10,126 Brit. yds., the short mile = 6859, and the geographical mile = 8101 Brit. yds. The Rhinland morgen of land = 10,185 Brit. sq. yds.

Gibraltar. — Besides the British standards, the following Spanish are also used: The arroba = 26 lbs. avoird.; the quintal = 100 lbs. = 101·75 lbs. avoird; the corn fanega = 1·55 Brit. bushel; the pipe of 117 gallons = 105 Brit. gall.; the liquid arroba = 277 Brit. gall.; and the wine gallon = 1.094 Brit. gall.

Goa.—The same as in Portugal, except that the candy of 20 maunds = 495 lbs. avoird. This, in the measurement of grain, is reckoned to be nearly 14 Winchester bushels.

Greece.—The same as in France.

Guiana (British.)—In general the same as in Britain; but the following, originally introduced by the Dutch, are also used: the lb. = 1·09 lb. avoird.; and the ell of 26 inches = 27 British inches.

Guiana (Dutch.)—In general the same as in Holland, but chiefly upon the old system.

Hamburg.—Of the weights, 128 drachmes = 32 loths = 16 oz. = 2 marks = 1 lb. = 1·0682 lb. avoird.; 112 lbs. = 8 lisponds = 1 centner = 119·64 lbs. avoird.; and 5 centners = 2 shipfunds. Ten lbs. = 1 stone of wool or feathers = half a stone of flax. Of butter, 280 lbs. form the great, and 224 the small tonne. A pipe of oil is reckoned at 820 lbs. Gold and silver are weighed by the Cologne mark, and their fineness valued as explained under the head Germany. Of measures, 6 palms = 2 feet = 1 ell = 22·578 Brit. inches. The Rhinland foot of engineers and surveyors = 12·36 Brit. inches. The Brabant ell, commonly used for piece goods, = 27·585 Brit. inches. Also 160 quarters = 40 stubgens = 20 viertels = 5 eimers = 4 ankers = 1 ahm = 31·87 Brit. gall.; and 24 ankers or 6 ahms = 1 fuder. Of wine, 6 tierces = 4 oxhofts or hogsheads = 1 faas; but these are of various sizes. Of corn, 160 spints = 40 himtens = 20 faas = 10 scheffels = 1 wisp or wispel = 29 Brit. bushels; two wisps = 1 last of barley or oats = 7·25 Brit. quarters; and 3 wisps = 1 last of wheat or rye = 1 stock of barley or oats = 10·87 Brit. quarters.

Hanover.—The lb. = 1·073 lb. avoird.; 112 lbs. = 1 centner; and 20 lbs. = 1 stone of flax or 2 stones of wool. Also 600 lbs. = 51 stubgens = 2 tonnes of honey; and 3360 lbs. = 240 lisponds = 12 shipfunds = 1 last. The Cologne mark is used for gold, silver, and silk. Two feet = 1 ell = 22·91 Brit. inches; the mile = 6·5676 Brit. miles. The morgen land measure = 2·5625 Brit. roods. Also 80 kannen = 40 stubgens = 4 ankers = 2·5 eimers = 1 ahm = 34·24 Brit. gallons; and 6 ahms = 4 oxhofts = 1 fuder of wine. Of corn, 96 himtens = 16 malters = 2 wisps or wispels = 1 last 82 Brit. bushels.

Hayti.—Port au Prince.—Principally the old system of France, together with the old English wine gallon.

Hesse-Cassel.—The lb. = 17·08 oz. avoird. The ell = 22·59 Brit. inches; the acre = ·5894 Brit. acre; the liquid ohm = 34·94 Brit. gall.; and 16 corn metzen = 4 himtens = 1 viertel = 4·42 Brit. bushels.

Hesse-Darmstadt.—Two lbs. = 1 French kilogramme = 2·20486 lbs. avoird. Ten feet = 1 klafter = 2·5 metres = 8·2023 Brit. feet; five ells = 3 metres = 3·2809 Brit. yds.; four morgens = 1 hectare = 2·47114 Brit. acres. The liquid ohm = 160 litres = 35·22 Brit. gallons; the corn malter = 1·28 hectolitre = 3·522 Brit. bushels.

Holland.—In 1820. the decimal system of France was introduced, but with the old Dutch nomenclature, as explained under the head Belgium. Of the old weights still used in many places, 10,240 aas = 320 engels = 16 oz. = 2 marks = 1 Dutch lb. troy = 1·0851 lb. avoird. There are also 16 oz. in the commercial lb. = 1·0893 lb. avoird., and 100 commercial lbs. = 1 centner. The old Amsterdam foot = 11·15, and the ell = 27·08 Brit. inches; the Rhinland foot = 12·36, and the Flemish or Brabant ell = 27·58 Brit. inches. Nineteen Dutch leagues make one degree of the meridian.

Japan.—The weights are almost the same as in China. The inc = 6·25 Brit. feet; but the measures of capacity have not been compared.

Java.—In this and the other Dutch colonies in India, the weights of China are ordinarily employed; but the pecul, instead of being exactly 133·33 lbs. avoird. is = 135·625 lbs. Of rice, the coyang = 3581 lbs. avoird., and the timbang = 10 sacks = 5 peculs = 678·125 lbs. The Dutch troy mark of 9 reals, = 3798 Brit. troy grains, is used for gold and silver. The foot = 12·36, and the ell = 27·75 Brit. inches. The kanne, liquid measure, = ·3282 Brit. gall., and 396 rands = 1 leaguer of arrack = 133·33 Brit. gall.; but 360 rands = 1 leaguer of wine.

India.—Grain is generally sold by weight, as also liquids, except wines and spirits, which at all the three presidencies are sold by British measures. Of the Bengal weights, 940 chittacks = 40 seers = 1 factory maund = 74·67 lbs. avoird., or two-thirds of a British cwt. The bazaar maund is one tenth greater than the factory, and similarly divided. Gold and silver are weighed by the new tola or sicca of 180 grains troy. Two cubits = 1 guz = 1 Brit. yd. The coss or mile of Bengal = 2000 yards, and 1600 sq. yds. = 20 cottahs = 1 biggah. At Bombay, 40 seers = 1 maund = one quarter of a British cwt., and 20 maunds = 1 candy = 5 cwts., which in corn is counted at

24·5 Brit. bushels. At Madras, 320 pollams = 8 vis = 1 maund = 25 lbs. avoird., and 20 maunds = 1 candy. The covid = 18·6 inches, but the British yard is used for cloth; and in land measure, 24 maunics = 1 cawncy = 6400 Brit. sq. yds. Also 320 measures = 400 marcals = 80 parahs = 1 garse or gursay The marcal = 750 Brit. cubic inches. When grain is sold by weight, 9256·5 lbs. avoird. are reckoned to the garse.

COMMERCIAL WEIGHTS, &c. of INDIA, and of several adjacent States, with their Equivalents in British, Bengal Factory, Madras, and Bombay Weights.

Commercial Weights, &c.	*Avoirdupois.*			*Bengal Factory.*			*Madras.*			*Bombay.*		
	Lbs.	*Oz.*	*Dr.*	*Mds.*	*S.*	*Ch.*	*Mds.*	*Vis.*	*Pol.*	*Mds.*	*S.*	*Pice.*
Acheen bahar of 200 catties,	423	6	13	5	26	13	16	7	19	15	4	27
Acheen guncha of 10 nelly,	220	0	0	2	37	13·7	8	6	16	7	34	8·6
Anjengo candy of 20 maunds,	560	0	0	7	20	0	22	3	8	20	0	0
Batavia pecul of 100 catties,	135	10	0	1	32	10	5	3	16	4	33	22·4
Bencoolen bahar,	560	0	0	7	20	0	22	3	8	20	0	0
Bengal factory maund,	74	10	10·7	1	0	0	2	7	35·7	2	26	20
Bengal bazar maund,	82	2	2·1	1	4	0	3	2	11·3	2	37	10
Bombay candy of 20 maunds,	560	0	0	7	20	0	22	3	8	20	0	0
Bussorah maund of 76 vakias,	90	4	0	1	8	5·6	3	4	35·2	3	8	27·9
Bussorah maund of 24 vakias,	28	8	0	0	15	4·3	1	1	4·8	1	0	21·4
Calicut maund of 100 pools,	30	0	0	0	16	1·1	1	1	24	1	2	25·7
China pecul of 100 catties,	133	5	5·3	1	31	6	5	2	26	4	30	14·3
Cochin candy of 20 maunds,	543	8	0	7	11	2·6	21	5	36·8	19	16	12·9
Gombroon bazar candy,	7	8	0	0	4	0	0	2	16	0	10	21·4
Goa candy of 20 maunds,	495	0	0	6	25	2·9	19	6	16	17	27	4·3
Junkceylon bahar of 8 capins,	485	5	5·3	6	20	0	19	3	12	17	13	10
Madras candy of 20 maunds,	500	0	0	6	28	0	20	0	0	17	34	8·6
Malacca bahar of 3 peculs,	405	0	0	5	16	15	16	1	24	14	18	17·1
Mocha bahar of 15 frazils,	450	0	9	6	0	1	18	0	0	16	2	25.7
Muscat custom-house maund,	8	12	0	0	4	11	0	2	32	0	12	15
Mysore candy of 7 morahs,	560	0	0	7	20	0	22	3	8	20	0	0
Pegu candy of 150 vis,	500	0	0	6	28	0	20	0	0	17	34	8·6
Penang pecul of 100 catties,	133	5	5·3	1	31	6	5	2	26	4	30	14·3
Surat maund of 40 seers,	37	5	5·3	0	20	0	1	3	37·9	1	13	10
Surat pucca maund,	74	10	10·7	1	0	0	2	7	35·7	2	26	20
Tillicherry candy of 20 maunds,	600	0	0	8	0	2	24	0	0	21	17	4·3

Ionian Isles.—The present British system was introduced in 1828, when the libbra sottile was made equal to 1 lb. troy, the libbra grossa to 1 lb. avoird., the talanto to 100 lbs. avoird., the stadio of 40 carnaco to 1 Brit. furlong, the barrel to 16 Brit. gallons, and the kilo of corn to 1 Brit. bushel. Of the old weights, 44 okes = 1 quintal = 123·15 lbs. avoird., or 40 okes = 1 cwt. nearly. Of the old measures, the Zante braccio for cloth = 27·18 Brit. inches, the silk braccio = 25·37 Brit. inches; the Zante barile = 14·68, and the Corfu barile = 15 Brit. gallons. Also 8 misure = 1 corn moggio of Zante = 4·63 Brit. bushels. In land measure, 24 zappade = 8 misure = 1 moggio = 2·4 Brit. acres.

Lubeck.—The Cologne mark of 3608 troy grains is used for gold and silver, and 112 lbs. = 8 lisponds = 119·67 lbs. avoird. Two feet = 1 ell = 22·7 Brit. inches; and 80 kannes = 40 stubgen = 20 viertels = 1 ahm = 31·87 Brit. galls. Also 96 scheffels = 24 barrels = 8 dromts = 1 last of wheat or ryc = 11·04 Brit. quarters. The last of oats = 12·95 quarters, and is similarly subdivided.

Lucca.—The common lb. = 0·7448 lb. avoird., but the lb. peso grosso = 8·234 lbs. avoird. or 11 Leghorn lbs. The braccio for woollens = 23·8 Brit. inches, but that for silk is an inch less. There are 4 braccio in the canna. The coppo for oil = 21·97 Brit. gall. Wine is sold by the Leghorn barile of 20 fiasci, and corn by the staja = two-thirds of a Brit. bushel.

Madeira.—In general the same as in Portugal; but in corn measure 23 alquieres are = 24 of Lisbon, and in wine measure 12 almudos are = 13 of Lisbon.

Majorca.—One hundred rottolos or lbs. = 1 cantaro Berbercsco = 88·2 lbs. avoird. = 104 rottollos = 4 arrobas = 1 quintal = 91·73 lbs. avoird.; and 312 rottollos = 3 quintals = 1 carga. Also 108 rottolos = 12 quartins or cortans = 1 odor of oil. The canna = 67·5 Brit. inches. Of wine, 6·5 corters = 1 quartin = 5·97 Brit. galls.; and 6 barcellas of corn = 1 quartera = 1·94 Brit. bushel.

Malacca.—One hundred catties = 1 pecul = 135 lbs. avoird.; 3 peculs make 1 bahar; and 500 gantons = 50 measures = 1 last = 29 Brit. cwt. nearly. Also 40 peculs = 1 coyau of salt or rice. A kip of tin = 41 lbs. avoird. The buncal, = 832 grains troy, is used for gold and silver. The covid = 18·125 Brit. inches.

Malta.—One hundred rottoli or lbs. = 1 cantar = 174·5 lbs. avoird. Gold and silver

are weighed by the lb. of 12 oz. = 4886 grains troy. Eight palmi = 1 canna = 82 Brit. inches; and 16 square tumuli = 1 salma land measure = 4·44 Brit. acres. The wine barile contains 9·17, and the oil caffiso 4·375 Brit. gall. Two caffisos make a barile. The salma corn measure = 7·875 Brit.

Marocco.—The rottolo or commercial lb. = 1·19 lb. avoird., and 100 such lbs. = 1 quintal. The market lb. is one half heavier, or = 1·785 lb. avoird. By it, iron, bees' wax, and provisions are sold. The canna for cloth = 21 Brit. inches, but the measures of capacity are very variable.

Mauritius.—In government affairs the British system is used, but in ordinary business something near the old system of France, reckoning the quintal of 100 lbs. poids de marc = 108 lbs. avoird.; 20 quintals = 1 French ton; 100 lbs. French to the bag of coffee, 150 to the bag of rice, and 250 to the bale of cotton. Also 15 French feet are reckoned = 16 Brit. feet, 7 aunes = 9 Brit. yds., 1 arpent = 1·04375 acre, 1 velt = 2 old English wine gallons, and 30 velts = 1 cask.

Mecklenburg.—The weights are chiefly those of Lubeck and Hamburg, but 100 Rostock lbs. = 1 Brit. cwt. There are 2 feet in the Rostock ell = 22·67 Brit. inches, and 1 scheffel of corn = 1·07 Brit. bushel. The liquid measures are those of Lubeck.

Mexico.—In general the same as in Spain; but the British yard and French aune are also in use for European goods.

Minorca.—The weights and dry measures are the same as in Majorca; and, except the gerra or jar of two quarters, = 2·65 Brit. gall., the other measures are the same as in Spain.

Mocha.—Of the weights, 150 maunds = 15 frazils = 1 bahar = 450 lbs. avoird.; 48 carats = 3 coffola = 2 miscals = 140·74 grains troy; 10 coffolas = 1 vakia, and 87 vakias = the weight of 100 Spanish dollars. The covid = 19, the guz = 25 Brit. inches; 8 noosfias = 1 gudda = 1·8 Brit. gallon; and 40 kellas dry measure = 1 tomand, which, of rice, is reckoned to weigh 168 lbs. avoird.

Modena.—The Modena libbra or lb. = 0·7045 lb.; the Reggio lb. = 0·7274 lb. avoird. and 100 lbs. = 1 quintal. The Modena braccio = 24·31; and the braccio of Reggio = 20·85 Brit. inches. In land measure, 72 tavole = 1 biolca = 2·8036 Brit. roods. Corn is sold by the stajo, = 1·94 Brit. bushel.

Moldavia.—In general the same as in Turkey; but in common trade, 25 okes of Galatz are reckoned = 2 Russian poods; 2400 okes = 7 centners = 700 lbs. of Vienna.

Montevideo.—Same as in Spain.

Mozambique.—One frazil = 12 lbs. avoird., and 20 frazils = 1 bahar.

Muscat.—Twenty-four cuchas = 1 maund = $8\frac{3}{4}$ lbs. avoird.

Naples.—One hundred rottoli or lbs. = 1 cantaro grosso = 196·45 lbs. avoird.; 1800 oz. = 150 lbs. = 1 cantaro piccola = 106·07 lbs. avoird.; and 7200 acini = 360 trapesi = 12 oz. = the lb. of 4950 grains troy, by which gold and silver are weighed. Of the measures, 96 inches = 8 palmi = 1 canna or ell = 83·05 Brit. inches; 15 palmi make 2 passi, and 7000 palmi = 1 mile = 2018 Brit. yds. There are 900 sq. passi in the moggia of land = ·8315 Brit. acre. Sixty caraffi = 1 baril of wine or brandy = 9·6 imp. galls.: 24 barili = 2 botte = 1 carro; 14 barili = 1 pipe; and 256 quarti = 16 staja = 1 salma of oil = 34·91 Brit. gall., and is reckoned to weigh 324 lbs. avoird. Four quarti of corn = 2 mezzetti = 1 tomole = 1·519 Brit. bushels. At Gallipoli, 320 pignatti = 10 staja = 1 salma of oil = 34·11 Brit. gall. The salmi at Bari = 36·42 such gallons.

Nassau.—The standards are founded on the metrical system of France. Ten inches = 1 foot = half a metre = 19·685 Brit. inches; 10 feet = 1 perch, and 100 square perches = 1 morgen = 25 ares = ·6170 Brit. acre.

New Brunswick.—Same as in Britain.

Newfoundland.—Same as in Britain.

New Granada.—Same as in Spain.

Norway.—The same as in Denmark.

Nova Scotia.—The same as in Britain.

Oldenburg.—The weights are those of Hamburg. Twelve inches = 1 foot = 11·65 Brit. inches; and the ell contains 22·76 of same inches. Also 104 kannes = 4 ankers = 1 ohm; 3 ohms = 2 oxhofts; and 144 scheffels = 18 tonnes = 12 malters = 1 last = 80·69 Brit. bushels.

Parma.—Of the weights, 300 ounces = 25 lbs. = 1 rubbio = 18·08 lbs. avoird. The braccio for measuring cloth = 25·35 Brit. inches, which exceeds that used for silk by 1·95 inch. There are 12 inches in the braccio di ligno used by surveyors, = 21·34 Brit. inches; and 6 bracci = 1 perch. Also 288 sq. perches = 72 tavole = 6 tari = 1 biolca = nearly ·75 Brit. acre; and 16 quarterole = 1 stajo of corn = 1·413 Brit. bushel.

Persia.—The weight chiefly used in commerce is the batman, which not only is of different amount in different districts, but depends also on the kind of article to be weighed. At Tabriz, 600 miscals = 300 derhams = 6 rattles = 1 batman = 6·34 lbs. avoird., which is only half the batman of Cherray. There is a derham of nearly 150 grains troy, by which gold and silver are weighed, and which exceeds the derham of Bushire by nearly 7 grains. Pearls are weighed by the abas of 2·25 troy grs. The measures are not less variable than the weights. The guz or common cubit = 25 Brit. inches, and the royal guz is one-half longer. The archin of Tabriz = 44 Brit. inches. There are 20 leagues or parasangs in a degree of the equator; but it is by the fursoch or augage, that is, the space of about four or five Brit. miles walked over by a horse in an hour, that moderate distances are usually reckoned. Greater distances are estimated by the day's march of a caravan, which may be about 30 miles. In corn measure, 200 sextarios = 50 chenicas = 25 capichas = 1 artaba = 1·039 Brit. bushels.

Peru.—The same as in Spain.

Philippine Isles.—The same as in Spain, except that the Chinese pecul is sometimes used.

Poland.—Of the weights, 128 drachms = 32 loths = 16 oz. = 1 lb. = 0·89414 lb. avoird.; 32 lbs. of Poland = 1 stone, and 100 such lbs. = 1 centner. The Cologne mark is used for coined gold and silver, but the Warsaw mark = 3113 grains troy for the uncoined. Two feet = 1 ell or lokci = 22·68 Brit. inches. The mile is the twentieth part of a degree of the meridian. There are 300 perches in the acre or morgen, = 1·384 Brit. acre; and 30 morgens make 1 wloka. Also 16 kwaterkas = 4 kwartas = 1 garniec = 4 French litres = 0·88039 Brit. gall.; and 25 garniecs = 1 becsksa. Of corn, 128 kwartas = 32 garniecs = 4 cwiercs = 3·5214 Brit. bushels.

Popedom or Papal States.—Of the commercial weights, 6912 grani = 288 denari = 12 once = 1 Roman lb. = ·7477 lb. avoird. The same lb. is also used by apothecaries, and for gold and silver; and 100 such lbs. = 10 decine = 1 quintal. The foot = 11·72 Brit. inches; 8 palmi = 1 mercantile canna = 6·52917 Brit. feet. The Roman mile = 1628 Brit. yds. Also 128 fogliette = 32 boccali = 1 barile of wine = 12·84 Brit. gall.; 80 boccali = 1 soma of oil = 36·14 Brit. gall.; and 88 quartucci = 22 scorzi = 4 quarte = 1 corn rubbio = 8·1 Brit. bushel. In Ancona, 100 lbs. = 73·75 lbs. avoird.; the braccio = 25·33 Brit. inches; and 24 boccali = 2 barili = 1 wine soma = 18·9 Brit. gall. Also 8 coppe = 1 corn rubbio = 7·87 Brit. bushels. In Bologne, the lb. = ·798 lb. avoird., and the foot = 15 Brit. inches.

Portugal.— Of the commercial weights, 32 marks = 16 oz. 1 arratel or lb. = 1·0119 lb. avoird.; and 32 arratels = 1 arroba. There are 4 arrobas in the quintal, and 54 in the tonelada. The apothecaries' lb. is only three-fourths of the commercial. There are 8 inches in the palmo craveiro, = 8·622 Brit. inches; the pe or foot = 1·5 palmo; 5 palmos = 1 varo; and though three palmos are usually said to form the varo, it is more nearly 26·67 Brit. inches. Ten palmos = 1 braço; the miles 2253 Brit. yds.; and 3 miles = 1 league. Of land, 4840 square varos = 1 geira, and 7 geiras make nearly 10 Brit. acres. Of liquids, 48 quartilhos = 12 canadas = 2 pots = 1 almude of Lisbon = 3·64 Brit. gal.; there are 18 almudes in the baril, 26 in the pipe, and 52 in the tonelada. In dry measure, 240 quartos = 60 alquieres of Lisbon = 15 fanegas = 1 moyo = 22·39 Brit. bushels. The almude of Oporto = 5·61 Brit. gall., and the alquiere of Oporto = ·465 Brit. bushel.

Prussia.—Of the commercial weights, 128 quintins = 32 loths = 2 Cologne marks = 1 lb. = 1·0311 lb. avoird.; and 110 lbs. = 1 centner or quintal = 113·42 lbs. avoird. There are 4000 lbs. in the ship last; and the apothecaries' lb. is only two-thirds of the commercial. The Cologne mark is used for gold and silver. The Rhinland foot = 12·356 Brit. inches; the ell = 26·26 of such inches; and 2000 perches = 1 mile = 8237 Brit. yds. There are 180 sq. perches in the morgen or acre, = 3054 Brit. sq. yds.; and 30 morgen = 1 hufe. Also 120 quarts = 4 ankers = 2 eimers = 1 liquid ohm = 30·23 Brit. gall.; 3 eimers = 1 oxhoft; 100 quarts = 1 tun of beer; and 48 quarts = 16 metzen = 1 corn scheffel = 1·512 Brit. bushel. Various old measures are still partially in use.

Prusso-German Commercial League or Zoll-Verein is composed of Anhalt Bernbourg, Anhalt Cothen, Anhalt Dessau, Baden Bavaria, Birkenfeld (part of Oldenburg), Frankfort, Hesse Cassel, Hesse Darmstadt, Hesse Homburg, Hohenzollern Hechengen, Hohenzollern Sigmaringen, Nassau, Prussia, principalities of Reuss, Saxony, Saxe-Altenburg, Saxe-Coburg-Gotha, Saxe Meiningen, Saxe Weimar, Schwarzburg Rudolstadt, Schwarzburg Sondershausen, Waldeck (exclusive of Pyrmont), Wurtemberg. The basis of their tariff is the centner of Baden = 50 French kilogrammes and divided into 100 pounds or livres usuelles of France. Hence the

zoll centner of 100 lbs. = 110·2429 lbs. avoird. The following relative values are given in the tariff: —

935·422	zoll lbs.	=	1000	Prussian lbs.
1120·	... ...	=	1000	Bavarian lbs.
2000·	... ...	=	1000	kilogrammes.
935·456	... ...	=	1000	Würtemberg lbs.
933·673	... ...	=	1000	Saxon (Dresden) lbs.

Or	14	... ...	=	15 Prussian lbs. nearly.
	28	... ...	=	25 Bavarian lbs.
	2	... ...	=	1 kilogramme.
	14	... ...	=	15 Würtemberg nearly.
	14	... ...	=	15 Saxon (Dresden) lbs. nearly.

Russia.—Of the weights, 96 zolotnicks = 32 loths = 1 lb. = ·90264 lb. avoird. With this lb., which is used for most purposes, gold and silver are also weighed, it being divided into 6528 grains. The Nuremberg lb. of 5527 grains troy is used by the apothecaries. The British and Dutch feet and inches are employed. The Russian foot = 13·75 Brit. inches; 16 verchoks = 1 archine for cloth = 28 Brit. inches; and 1500 archines = 500 sagenes = 1 verste or mile = 1167 Brit. yds. Also 2400 sq. sagenes = 1 deciatine = 2·7 Brit. acres; and 100 tcharkeys = 2·705 Brit. gall. Of corn, 64 garnietz = 32 tchetverkas = 8 tchetveriks = 4 payaks = 2 osmines = 1 chetwerk = 5·77 Brit. bushels. Various old standards are partially in use in different parts of the empire.

Sardinia.—In Turin, 12 oz. = 1·5 mark = 1 lb. = 8133 lb. avoird.; 25 lbs. = 1 rubbio; and the mark of 3795 grs. troy is used for gold and silver. The raso or ell = 23·6 Brit. inches; the mile = 2697 Brit. yds.; the giornate = ·938 Brit. acre; the wine rubbio = 2·07 Brit. gall.; and the corn sacco = 3·17 Brit. bushels. In Nice, 150 lbs. = 1 quintal = 103·14 lbs. avoird.; the ell = 3·8975 Brit. feet; 12 rubbi = 1 charge = 20·75 Brit. gall.; but the charge of corn = 4·4 Brit. bush. In Cagliari, 12 oz. = 1 lb. = ·875 lb. avoird.; the raso = 21·63 Brit. inches, and the restiere = 4·04 Brit. bushels.

Saxony.—In Dresden, the lb. = 1·0293 lb. avoird.; 110 lbs. = 1 centner; the mark = 3602 grs. troy; two feet = 1 ell = 22·3 Brit. inches; 3200 feet = 1 mile = 9914 Brit. yds.; the morgen or acre = 1·261 Brit. acre; the liquid eimer = 14·84 Brit. gall.; the scheffel = 2·859 Brit. bushels. In Leipzig, 32 loths = 1 lb. = 1·0301 lb. avoird.; the centner = 110 lbs. = 113·32 lbs. avoird. Two feet = 1 ell = 22·24 Brit. inches; 60 ells = 1 schock; the liquid eimer = 16·69 Brit. gall.; the old scheffel for corn = 3·812 Brit. bushels. The Dresden scheffel, which is one third greater, is now the general standard.

Siam.—The common weight is the catty = 2·67 lbs. avoird., which is double the Chinese catty; but the pecul, containing only 50 catties, is just equal the Chinese pecul. Also 8 spans = 4 cubits = 1 fathom = 6·5 Brit. feet; 20 fathoms = 1 sen; but a square area of 20 fathoms to the side is likewise named a sen.

Sicily.—The cantarro grosso = 192·53 lbs. avoird.; the cantarro sottile = 175·03 lbs. avoird. The lb. = ·7014 lb. avoird. Gold and silver are weighed and valued as at Naples; 94 cubic French feet of the old standard = 5 salmes = 1 ship ton. Oil is sold in Messina by the caffiso, = 2·58 Brit. gall. The canna = 81·35 Brit. inches; the wine tonna = 31·24 Brit. gall.; the corn salma = 7·61 Brit. bush., and the salma grossa of Leghorn = 9·47 Brit. bushels.

Sincapore.—The Chinese pecul of 133·33 lbs. avoird. is the usual weight. The covid for cloth = 18 Brit. inches; the gantang, by which corn, fruit, and liquids are occasionally sold, = 1·04 Brit. gall. European commodities are often sold by British weights and measures.

Spain.—Two marks = 1 lb. = 1·01443 lb. avoird.; the arroba consists of 25, and the quintal of 4 lbs. The mark used for gold and silver is = 3550 grains troy. Twelve pulgados = 1 Burgos foot = 11·128 Brit. inches; 4 palmos = 1 vara or ell = 33·38 Brit. inches. The estadale = 12 feet; 8000 varas = 1 league = 7418 Brit. yds. A degree is divided into 20 marine leagues; 5378 sq. varas = 1 arcada of vine land; and 6000 sq. varas = 1 fanegada of corn land. The greater or wine arroba = 3·54 Brit. gall., the less or oil arroba = 2·77; the pipe = 27 of the greater arrobas, or 34·5 of the less; the corn fanega = 1·55 Brit. bushels; and 12 fanegas = 1 cahiz. But a variety of local standards is also in use.

Sweden.—The lb., victual weight, = 6563 grains troy; the lispund contains 20, the sten 32, the centner 120, the waag 165, and the skeppund 400 such lbs. Two feet = 1 ell = 23·38 Brit. inches; 8 ells = 1 ruthe; 2250 ruthes = 1 mile = 11,689 Brit. yds.; the tunnaland = 1·22 Brit. acre. The liquid kann = ·5756 Brit. gall.; the fuder

contains 300, the pipe 180, the oxhufvud 90, and the ahm 60 kanns. The corn tunna = 4·029 Brit. bushels. But various other measures and local standards are in use.

Switzerland.—In 1837 the 12 cantons, Berne, Zürich, Lucerne, Friburg, Zug, Soleure, Basel, Aargau, Thurgau, Schaffhausen, Glarus, and St. Gallen, adopted the following standards, founded on the decimal system of France: 32 loths = 1 lb. = half a kilogramme = 1·1024 lb. avoird.; 2 fect = 1 ell = 6 decimetres; and 1 stund = 4800 metres = 5249 Brit. yds. The liquid mass = 1·5 litre = 2·64 Brit. pints; ten mass of corn = 1 viertel = 15 litres = 1·65 Brit. peck. In Geneva, besides the French system, 100 lbs. gros poids = 121·43 lbs. avoird.; 100 lbs. petit poids = 101·19 lbs. avoird. The winechar = 120·71 Brit. gall.; the coup of corn = 2·13 Brit. bushels.

Tripoli.—One hundred rottoli = 1 cantar = 109·71 lbs. avoird.; the caraffa of oil weighs 3·125 rottoli. The great pik = 26·42, and the small = 19·03 Brit. inches; the wine barile = 14·25 Brit. gall.; and 4 temen = 1 corn hueba = 2·95 Brit. bushels.

Tunis.—One hundred rottoli = 1 cantaro = 111·75 lbs. avoird.; for cotton the pik or ell = 19·23, for silk and linen = 25, and for woollen = 26·5 Brit. inches. The wine millerole = 14·15, and the oil mettar = 4·27 Brit. gall. The corn caffiz = 1·918 Brit. quarter.

Turkey.—The oke = 2·8286 lbs. avoird.; 1 oil almude should weigh 8 okes; 100 rottoli = 44 okes = 1 quintal = 124·46 lbs. avoird. The great pik = 27·9, the small = 27·06 Brit. inches; the berri or mile = 1826 Brit. yds.; the liquid almude = 1·143 Brit. gall.; the corn fortin = 3·84 Brit. bushels.

Tuscany.—The quintal or cantaro = 100 lbs. = 74·86 lbs. avoird.; 20 soldi = 1 braccio = 22·979 Brit. inches; the mile = 1808 Brit. yds.; the saccato of land = 5928 Brit. sq. yds.; the baril for wine = 10·03, and for oil = 7·36 Brit. gall. The corn stajo = 2·676 Brit. pecks; and 24 staja = 1 moggio.

United States of America.—Chiefly the same as in England prior to the imperial system. But instead of the cwt. they generally use simply 100 lbs. which are sometimes called a quintal. The barrel of flour weighs 196 lbs.; the hhd. of Indian meal 800 lbs.; and the barrel of salt meat 200 lbs.

Wallachia.—The weights are those of Moldavia. The killow of Brailow, of about 400 ocche = 1·5 killow of Galatz = 18 killows of Constantinople = 9 sacche of Leghorn. In other respects the same as in Turkey.

West Indies (British.)—In general the same as in Britain; but Spanish measures are partly used in Trinidad, and the old system of France in St. Lucia.

West Indies (French.)—Same as in France.

West Indies (Dutch.)—Chiefly the old system of Amsterdam. In Curaçoa, the Spanish varo is also employed.

West Indies (Danish.)—Same as in Denmark. The British yard and French aune are sometimes employed.

West Indies (Swedish.)—Chiefly the same as in Sweden.

Würtemberg.—The lb. = 1·0314 lb. avoird.; the foot = 11·25 Brit. inches. The toise = 6 fect; the ell = 24·18 Brit. inches. The mile is the fifteenth of a degree. The morgen or acre = 31·518 French ares; and 1·5 morgen = 1 juchart. The fuder of wine = 388·16 Brit. gall. The scheffel of corn = 4·88 Brit. bushels.*

* These Tables are extracted from the ENCYCLOPÆDIA BRITANNICA, seventh edition.

INTRODUCTION.

CHAPTER I.

HISTORICAL SKETCH OF THE PROGRESS OF GEOGRAPHICAL DISCOVERY

When the second father of our race came forth from his ark, on the mountains of Ararat, the face of the earth was desolate, "the world was all before him where to choose," and geographical science had to begin her course. The situation, however, of Ararat, is as much a matter of dispute as that of Eden; the Bible, the only record of these events, supplies no clue to guide us to the spot; neither does it tell us the time or the manner in which the new generations of men proceeded to, and took possession of, the countries in which we find them at the dawn of history. The book of Genesis contains, indeed, the names of the descendants of Noah, among whom the earth was divided after the flood; but, as none of these (except only such as refer to the Hebrews themselves and their immediate neighbours) can be satisfactorily identified with nations and countries, we are compelled to descend at once through the dark interval of many centuries, to inquire, What was the extent of the sacred historian's personal acquaintance with the earth's surface? and that we shall find to have been extremely limited. He speaks quite indefinitely of the east and the west; of the south and the north he seems to have known as little; and, in short, the geography of the Israelites in his days may be said to have comprised only Syria, Palestine, Egypt, and the north-west parts of Arabia. Even in the times of the kings and the prophets of Israel and Judah, the Hebrew geography seems to have extended no farther than to Assyria, Media, Persia, and Ethiopia. Solomon, indeed, sent ships to Tarshish and Ophir, but the navigators were Phenicians, and the commerce thus begun lasted too short a time for the nation to acquire much knowledge of foreign countries.

The great geographers of those early ages, the most renowned explorers of unknown regions, were the *Phenicians*, a branch of the great Semitic, or Aramean, family of nations, which occupied the regions between the Mediterranean Sea and the Tigris, and extending southward from Mount Taurus to the Indian Ocean. Phenicia itself was one of the smallest countries of antiquity, comprising only a narrow slip of land on the coast of Syria, about 120 miles in length, and probably nowhere more than 18 or 20 in width. This short line of coast, rich in bays and harbours, was bounded by lofty mountains covered with forests, which supplied building materials for the ships and houses of the Phenicians. Seven cities occupied various points on the coast, and between them were a number of smaller towns, the abodes of industry and enterprise, forming, as it were, one city, extending along the whole line of coast and the adjoining islands: this chain of cities, with their harbours and numerous fleets, must have afforded a spectacle then unequalled in the world, impressing the stranger who visited them with the highest idea of the opulence, the power, and the spirit of the people. Precluded by the nature of their country from extending their dominion by land, and invited by the numerous facilities for intercommunication presented by the adjacent sea, the Phenicians seem early to have directed their attention to foreign commerce. From Homer we learn, that even before his time, they were the general carriers of the Mediterranean; and in the books of Kings we are informed, that their trade extended to regions of the east, or the south, so remote that three years were spent in each voyage.

For the better carrying on of this trade, they established factories and built cities on every part of the Mediterranean shores. Carthage, the daughter of Tyre, rivalled her mother-city in wealth and power, and extended the Punic dominion over a large

portion of Africa and Europe. Beyond the straits of Gibraltar, the Phenicians possessed the present Cadiz, and several other stations. They explored the west coast of Africa to an extent now unknown; they visited the British Islands for tin; and with the sacred isle of the west, the modern Ireland, they appear to have been familiarly acquainted, if they did not actually colonize it. They have even been supposed to have reached America; and certainly there are passages of the Greek and the Roman writers that will hardly admit of any other interpretation.* Judah and the land of Israel supplied the Phenicians with the staple necessaries of life, corn, wine, and oil; Arabia furnished them with wool, frankincense, and myrrh; while gold, silver, tin, and coarser produce of other kinds, were derived from the distant coasts of Europe and Africa.

Besides their maritime commerce, they appear to have also traded overland with the interior countries of Asia. The great point to which this trade was directed was Babylon; and there still remain, in the desert, between Syria and the Euphrates, the splendid ruins of Tadmor, or Palmyra, which appears to have been one of their stations, and which, long after the fall of Tyre and Sidon, continued to enjoy great commercial prosperity, till ruined by the vengeance of the ruthless Aurelian, in the third century of the Christian era. Babylon herself, the most splendid and renowned of eastern cities, besides being the capital of a mighty empire, was also the seat of a widely extended commerce with all parts of Asia. Most advantageously situated for communicating by land with the most fertile regions of the east, her situation was equally convenient for maritime and for river navigation. The ancient geographers, travellers, and historians, uniformly represent the Babylonians as a people fond of magnificence, and accustomed to a variety of artificial wants, which could have been supplied only by commercial relations with many countries, some of them very remote. They were celebrated, too, for their manufactures; and by the extent of her commerce and conquests, Babylon became the great central point where all nations assembled. With this luxurious city the Phenicians traded; but the records of both nations having perished, it is only from a few imperfect notices of the Greek and Hebrew writers that our scanty knowledge of these people is derived. Had the case been otherwise, geography would not have been still in its infancy two thousand years after the fall of Babylon.†

Next to the Hebrew writings of the Old Testament, the oldest geographical records extant are the Iliad and the Odyssey of Homer, which are the sole depositories of the knowledge possessed by the Greeks of the state of the world prior to the age of the poet. In these primeval times, the earth appears to have been regarded as a flat circular disk, surrounded by the ocean stream. The extent of the known world was only from Colchis in the east, to somewhere about Sicily in the west; and the Mediterranean and the Euxine seas, communicating at either end with the ocean, stretched across it in that direction. Egypt seems to have been known, and the Ethiopians are also mentioned; but, towards the north, the information of Homer was bounded by Thrace. Hesiod, who lived sometime after Homer, knew of the Lygyes, who dwelt beyond the Tyrrhenians, and of the river Eridanus (Rhine), which flowed from the Riphean mountains northward to the ocean, of which river the Rhone and the Po came afterwards to be considered branches. He also mentions the amber which was collected at its mouth, and the singing swans that haunted its waters and those of the ocean. He also celebrates the fertile land of Umbria, where the flocks and the herds brought forth three times in each year, two, three, and four at a time, where hens laid thrice a-day, the fruits of the earth ripened thrice a-year, and the women bore two or three children at a birth! Greece itself formed the central region, and Delphi, the seat of the great oracle and temple of Phœbus-Apollo, was called the centre (ὀμφάλος) of the earth. The world, the universe, appears to have been considered a hollow globe, divided into two equal portions by the flat disk of the earth; and how very limited was this fancied universe we learn from Hesiod, who says that it would take nine days for an anvil to fall from heaven to earth, and an equal number to fall from earth to the bottom of Tartarus! The upper part of this globe was *Heaven*, the abode of the everlasting gods, and the interior of this upper hemisphere was enlightened by the sun, moon, and stars. The lower part of the globe was *Tartarus*, filled with eternal darkness, and having its still air unmoved by any wind. From such beginnings as these have geography and astronomy advanced together, till the uttermost ends of the earth have been explored, and the prying eye of man has dived into the

* Our readers will find a summary of the reasons for believing America to have been not altogether unknown to the ancients, in a book from which they might hardly expect such information, viz. *Faber on the Difficulties of Infidelity.*

† Heeren's Historical Researches.

depths of the universe, far beyond what was once supposed to be the solid firmament of heaven, studded with little twinkling stars. "Poor man, to think the earth was turning round!" has been imagined as a fitting speech of a monk to Galileo; but what would Homer and Hesiod, or any of their contemporaries, have said, had they been told that the earth is in reality a mighty globe, as large as their universe, and that the universe itself is an assemblage of worlds, where man can see no beginning and no end—a mass of light and life, as incomprehensible as the Being who has given it existence!

From the time of Homer to that of Herodotus, the Greeks spread themselves over several parts of the Mediterranean shores. About 600 years B. C., a colony of Phoceans from Ionia founded Marseilles; and between 500 and 430, other colonies, from various parts of Greece and Asia Minor, had established themselves in Sicily, Sardinia, Corsica, and even Spain; but the history of these events can only be gathered from short, vague, and imperfect narrations, scattered through a great number of authors. Herodotus is celebrated as the father of history; and may, with equal justice, be styled the father of descriptive geography. By birth a citizen of Halicarnassus, he travelled into the three quarters of the globe that were known in his time, and ended his career in southern Italy, where, probably, he also finished the admirable history in which he has introduced the geographical information he had taken so much trouble to procure. He describes the Indians as the people of Asia who are nearest the east, and the place of the rising sun; and the country beyond them as a perfect desert of sand. The last inhabited country towards the south was Arabia; and adjoining it on the S.W. was Ethiopia, the last of inhabited lands. He was acquainted with Lybia, as far as the Atlantes, but beyond them he knew of no place by name, only that there was a habitable country as far as the pillars of Hercules, and even beyond them. His knowledge of the west of Europe was equally imperfect. He had heard of the river Eridanus, from which the Greeks obtained their amber, and the Islands called Cassiterides, from which they got their tin; but he had endeavoured, he says, without success, to meet with some one who, from personal observation, could describe to him the sea that lay in that part of Europe. The Ister (Danube) he appears to have been well acquainted with; he also mentions some of the rivers that flow from Scythia into the Black Sea; and he knew that the Caspian was a sea by itself, unconnected with any other, a piece of information thrown away upon subsequent geographers, Strabo, Mela, and Pliny, who, five centuries later, still represent it as a bay of the northern ocean. We are not to conclude, however, that he had accurate notions of all the countries within these limits; for even of *Rome*, the destined mistress of the world, then commencing the fourth century of her existence, he does not mention the name!

For some time after the days of Herodotus, the Grecian knowledge of the world appears to have been nearly stationary. About 368 years B. C., Eudoxus of Cnidus, whose desire of studying astronomy induced him to visit Egypt, Asia, and Italy, who first attempted to explain the motions of the planets, and who is said to have discovered the inclination of the moon's orbit, and the backward motion of her nodes, is celebrated as having first applied geographical observations to astronomy; but he does not appear to have directed his researches or conjectures to the figure or the circumference of the earth, or the distances or relative situations of any places on its surface. Nearly about the time of the death of Eudoxus, Aristotle flourished. This great philosopher, collecting and combining into one system the discoveries and observations of all who had preceded him, rendered them less liable to be forgotten or misapplied. From the observations of travellers, that the stars seen in Greece were not visible in Cyprus or Egypt, he inferred the spherical form of the earth, the basis of geographical science. His knowledge, however, of the details of geography was not much advanced. He supposed the coasts of Spain to be not very distant from those of India; and he describes the habitable earth as a great oval island, surrounded by the ocean, terminated on the west by the river Tartessius, on the east by the Indus, on the northwest by Albion and Ierne (Britain and Ireland), of which, however, his knowledge was very imperfect. To the north and the south, the Riphean mountains and the deserts of Lybia appear still to have been his limits.

A little earlier than Aristotle, Hippocrates of Cos, the celebrated physician, who had travelled in Scythia, Thessaly, Colchis, Asia Minor, and perhaps Egypt, composed the most ancient work on physical geography that has come down to our times. In his treatise on "Airs, Waters, and Places," he divides the world into two parts, and always opposes Europe to Asia, including in the latter both Egypt and Lybia. He appears in the course of his journeys to have followed the plan and the route of Herodotus, but his system is still that of Homer, showing how little progress the

science had hitherto made. In the same age lived Pytheas of Marscilles, who is celebrated for his knowledge in astronomy, mathematics, philosophy, and geography, and for the ardour and perseverance that carried him forward in the path of maritime discovery; but the course of his voyages and the extent of his discoveries are not very clearly ascertained. Setting out from Marseilles, he coasted Spain, France, and the east side of Britain, from the northmost point of which he continued his voyage for six days, till he reached a land called *Thulé*, 46,300 stadia from the equator; and, it being then the summer solstice, he saw the sun touching the northern point of the horizon, asserting at the same time, that the day and night were each of six months' continuance. The situation of this Thulé has been ever since a fertile subject of dispute among geographers. Strabo and Polybius utterly denied his veracity; but on some points he was certainly much better informed than themselves; and, perhaps, the discrepancies that exist in his narrative, and have made its truth be doubted, are more owing to the mistakes or wilful perversions of those who quoted it, and have handed it down to us, than to its original falsity.

We are now arrived at the age of the greatest practical geographer of antiquity, the most ardent and persevering explorer of unknown seas and countries, and, indeed, in every respect the most illustrious personage that figures in ancient history — ALEXANDER THE GREAT, who appears to have been actuated by a desire to be honoured as the patron of science, nearly as strong as his desire to be known to posterity as the conqueror of the world. He carried along with him, in his triumphant journey, geographers and engineers, to measure exactly the marches of his army, and to make observations upon the countries through which they passed. The famous voyage of Nearchus from Nicea, on the Hydaspes, to the head of the Persian Gulf, accompanied on land by Alexander himself, the projected voyage round Arabia, the survey of the west side of the Persian Gulf, the projected establishment of a direct commercial intercourse between India and Alexandria, and the foundation of this city, which gave a new turn and a strong impulse to commerce and navigation, are but a few of the benefits that geography received from Alexander, or would have received, had not his plans been frustrated by his sudden and early death.

The conquests of Alexander opened up to the knowledge of the Greeks the wide regions of the east. After his death, *Seleucus Nicator* penetrated to the Ganges; Patrocles, his admiral, sailed upon the Indian Ocean and the Caspian Sea; numerous other voyages and travels were made by different individuals in different directions; geographical knowledge concerning all parts of the world abounded at the court of Ptolemy Euergetes; and, with all these helps, *Eratosthenes* at length completed a system of geography, above two centuries B. C. The limits of the known world of the Alexandrian Librarian were probably *Thinæ* or *Tenasserim*, to the east; but his positive knowledge terminated at the mouths of the Ganges. On the sources of the Nile, his information appeared to be as extensive as that possessed at the present day. On the west and the north, his knowledge was the same as that of Pytheas. For the western side of Africa, he followed Herodotus. His charts of the coasts of Arabia, of India to the Ganges, of the islands Albion and Thulé and of the course of the upper Nile, prove the great progress of the Grecian geography since the time of Herodotus.

This progress was not confined to the navigation of the Indian ocean, for commerce had already opened up a route across Central Asia, which penetrated by the north of Persia into the north of India, and reached Palibothra by descending the Ganges, whilst other caravans made the circuit of the mountains Imaus, or Belur, to reach Serica. We cannot but regret that the works of *Agatharchides* of Cnidus have not come down to us entire. He appears to have visited the Grecian establishments on the coasts of Ethiopia and Arabia; and if Diodorus borrowed from him the curious details concerning Meroé, probably *Hipparchus*, 140 years B. C., derived from his writings the idea of a great southern territory which joined eastern Africa with India. To this ornament of the Alexandrian School, we owe the foundation of a geography which was purely astronomical, and perhaps the primary idea of geographic projections; but at that time celestial observations were but few; and in supplying the gaps by hypotheses, Hipparchus added to these errors in the map of Eratosthenes which he wished to rectify. Half a century before him, the travels of Polybius, then detained as a hostage by the Romans, gave them additional information concerning their conquests. Being of a positive disposition, he denied the discoveries of Pytheas, because contradictions were involved in them. He refuted the error of those who believed that the torrid zone was uninhabitable, whilst he too much restricted the limits of the known world. The subsequent conquests of the Romans in Macedonia, Syria, Numidia, Arabia, Mauritania, Britain, and Gaul, very considerably extended the circle of

geographical knowledge, and confirmed the truth of what Polybius had rejected. Hibernia, or Ireland, was again recognised, after being denied by Pytheas, Eratosthenes, Polybius, and Hipparchus, although its existence had been proved many ages before by the Carthaginian mariners. With the assistance of these new documents, and from his individual observations, the astronomer *Possidonius* imagined he had rectified the system of Eratosthenes; but he only committed greater errors. He enclosed the habitable world in a very elongated ellipsis, pointed at its two extremities, the form of which he compared to a ring. He probably believed, according to the account of Eudoxus of Cyzicus, in the possibility of executing the circumnavigation of Africa, and rejected the idea of Hipparchus, who converted the Indian ocean into an inland sea.

Meanwhile Julius Cæsar had illustrated the geography of Gaul, and commenced the discovery of Germany, and the coasts of the British isles. In the Augustan age, Germanicus as a conqueror visited Dalmatia, Bosnia, Servia, and Bulgaria, which had never been well known to the Greeks; the Roman Eagle reached the banks of the Elbe, and the description of the Great Empire was terminated by *Agrippa*, whose chart, exposed under his portico, exhibited its immense extent.

At this epoch *Strabo* composed his geography, a vast fund of the knowledge of his predecessors, and of his personal observations. It is evident that he had carefully consulted Dicearcus, Polybius, Eratosthenes, Hipparchus, and Possidonius; and that he had borrowed from, and commented upon, a great number of other authors. His work comprehends, at the same time, a very minute description of Greece and Asia-Minor, in both of which he had travelled, and a rapid sketch concerning the other nations that were then known. An exact topographer, and a scrupulous and modest critic in the former part of his work—in the other, Strabo is often nothing more than a faithless compiler, and a partial and superficial judge. The limits of his positive knowledge were, to the north, *Ierne* or Ireland and the mouth of the Elbe, and he avows that what is beyond this river, and what to the north of the *Tanais* or the Don, is unknown to him; he refuses to give credence to the existence of the *Thulé* of Pytheas, because, as he alleges, the earth is not habitable 4000 stadia to the north of Britain. Towards the east, he believes that *Taprobana* and *Thinæ* are the extremities of the world. As to Africa, his knowledge does not extend beyond the eastern coast of *Noticornu*, now Bandel-Caus; and upon the western side to the river *Bambotum* (perhaps the river Non, as Polybius had stated.) These coasts, in the opinion of Strabo, trended the one towards the east, and the other toward the west, at the latitude of $12\frac{1}{2}$ of our degrees. It is here that he placed to the west his *Ethiopes Ætherii;* to the east the *Regio-Cinnamomifera;* between these two countries he only leaves a small space, into which the voyager, repelled by a burning and destructive atmosphere, cannot enter. He adopted the opinion of the Alexandrian School, concerning the union of the Atlantic and the Indian oceans, at the south side of this Africa, which was cut short by a half; and this opinion, preserved in the west of Europe during the middle ages, as attested by the planisphere of *Sanuto*, and some other charts of the same epoch, unquestionably influenced the bold Portuguese navigators to attempt the route of the Cape of Good Hope.

Strabo had scarcely finished his description of the world, when it was rendered obsolete by the progress of discovery. The Roman armies, these terrible pioneers of geography, did not stop in their career. Speedily the fleets of the empire turned the promontory of Jutland, or the Cimbrick Chersonese, discovered the island of Scandia, and finally penetrated to the entrance of the Gulf of Finland. The *Ebudæ*, or Western Islands, and the Orkneys, were visited at the time of the expedition of the Emperor Claudius. Some years afterwards, the south of Albion was visited by Agricola; and his fleet, in making the circuit of Caledonia, observed the true Thulé, or the chief of the Shetland islands, which Pytheas seems to have confounded with Iceland, of which he had also heard. Yellow amber became the rage of the Roman fair, and immediately speculative adventurers traversed the interior of Germany, of which they previously knew only the frontiers and the coasts. Far from these ancient forests, and under milder skies, *Hippalus* discovered the character of the monsoons, and confiding in these winds, he ventured to shoot right across from Africa to India, and thus open up more prompt and ready communications. New light concerning Africa resulted from the expeditions of the Consul *Paulinus* into Sijilmessa, and of Cornelius Balbus against the Garamantes. The limits of the great desert were ascertained, and various *oases* cheered the eyes of the conquerors. All this knowledge, acquired since the time of Strabo, is found in the natural history of *Pliny*, who seems to have been ignorant of the geography of his predecessor, although conversant with that of many others, valuable fragments of which he has preserved.

From the writings of Pliny, we perceive that we have lost Agrippa's description of the Roman Empire, to which we have already referred; as also the commentaries of king *Juba* regarding Africa, the relation of *Statius Sebosus* concerning the Fortunate Islands, and the Memoirs upon India, by *Seneca*. Pliny has no fixed opinions concerning the extent and figure of the earth; he hesitates between Hipparchus and Eratosthenes. But ill informed of the length of the different stadia of the Greeks, Egyptians, and Babylonians, he counted them at the rate of 8 to the Roman mile; whence resulted innumerable errors, which his want of critical skill still more increased. But in the midst of all these, there were an immense number of invaluable truths collected together for the first time in his great work.

The geography of *Pomponius Mela*, who lived nearly at the same epoch, is neither more exact, nor better defined. Like Pliny, he compares nothing, but confounds old opinions with recent discoveries. He restored the system of Eratosthenes, and the doubt whether the Caspian communicated with the ocean. The course he assigns to the Oxus is correct: he knew that the Sarmatians had extended their possessions to the Baltic, and that Scandinavia was separated from the neighbouring islands: Herodotus was his guide respecting India and Scythia, or, in other words, his intelligence was not so advanced as that of many of his contemporaries. He followed, but as an unfaithful copyist, the Periplus of Hanno, the Carthaginian, for the coasts of Africa. He admitted the probability of the junction of the Nile and the Niger, but he rejected the hypothesis of the latter's subterranean course, so extravagantly described by the Roman naturalist. He places the source of his Niger or *Nuchul* in Ethiopia, and adds this important observation: "Whilst other rivers run to the ocean, this flows to the east, and the centre of the continent, where it is lost, without any one knowing where it ends." May it not be said that Mela anticipated, by eighteen centuries, the state of our knowledge of the Joliba?

It is probable it was in the first century of the Christian era that there appeared that Nautical and Commercial Itinerary, which is known under the title of *The Periplus of the Erythrean Sea*, and the abridged geography of Dionysius Periegetes, in the shape of a Greek poem. Another itinerary, by Isidorus of Charax, supplies many geographic details concerning the empire of the Parthians. Towards the close of the same century, the demands of luxury pushed commerce into the north of Asia, as far as *Serica*, concerning which, a merchant named Titianus afterwards published some imperfect details. By the new Roman expeditions, it was made to appear that Africa extended southwards much farther than was usually supposed. *Marinus of Tyre* compared the authors who had written before him, and composed a complete body of geography, in which the new charts which he constructed are discussed; but it is only through the extracts of Ptolemy that we are acquainted with his works.

At the commencement of the second century, the conquests of Trajan extended the limits of geography. Dacia and Mesopotamia became well known; and this is the period which gave birth to some of those celebrated itineraries which the masters of the world caused to be prepared for the guidance of the marches of their troops, and the private possession of which was esteemed as the crime of high treason. The *Itinerary* of the emperor Antoninus, which has been attributed without proof to Ethicus, appears to be a collection of the ancient and modern maps of roads. The *Itinerarium Hierosolymitanum* seems to have been a map of roads given to some imperial functionary; the fragment of it which we possess indicates, in the most minute detail, the route from Bourdeaux to Jerusalem. Finally, *The Table of Peutinger*, more considerable than the *two* former, and which, according to Mannert, goes as far back as the reign of the Emperor Severus, comprehends in its extraordinary tracks, not only the Roman empire, but the farthest limits of the then known world, more especially towards the east, where we see the country of the Seres, the mouths of the Ganges, the island of Ceylon, and even roads traced in the heart of India.

Finally, we arrive at the epoch when the geography of the ancients was attempted to be put upon a scientific basis, and in the hands of *Ptolemy* it rose to the height of a mathematical science. The work of this celebrated man is nothing more than a set of elementary and geometrical tables, on which the figure and extent of the earth, and the position of its various portions, are set down. The limits of the different countries are not marked, and the author but seldom gives any historical notice. His text appears to have been often corrupted by the negligence of copyists and editors; but even after giving them the credit of many and great errors, very many still remain which really belong to the geographer, and these seem to have arisen from the *measures* which he used, and which made him miscalculate his longitudes. Nevertheless, with all its faults, the work of Ptolemy raises itself like a brilliant light-house in the dark

night of time. He displays to us in detail countries which never saw the eagles of Rome, and which were not thought of for ten centuries afterwards, except on the faith of his descriptions.

After the publication of the work of Ptolemy, the inroads of the barbarians, both in the east and the west, originated some new opinions concerning the northern portions of Europe. The marches of Septimius Severus from the banks of the Euphrates and Tigris to the mountains of Caledonia, A. D. 209, furnished information concerning the east and the north. A portion of this additional knowledge escaped the injury of time, and is found preserved in the itineraries of which we have spoken, and in the histories of *Ammianus-Marcellinus* and *Procopius*. The former supplies us with intelligence concerning the nations of Germany and Sarmatia, for which we seek in vain in Tacitus, Pliny, or Ptolemy; and Procopius gives us information respecting the people round the Black Sea and the Caucasus, which is the more valuable from having been collected by himself on the spot. In the sixth century, the north of Europe was, as it were, enlarged, by Sweden and Norway being introduced to notice. And this was the last advance made in ancient geography before the world sunk into the darkness of the middle ages.

The irruption of the northern tribes into the Roman empire swept knowledge almost entirely from the face of the earth, and condemned it to sleep for centuries in monastic recesses. The ignorance that prevailed was deplorable, and few appear to have had any acquaintance with geography beyond their own immediate neighbourhood. It would be unjust, however, to deny the services which were rendered to geography by the clergy of the middle ages. A zeal for their religion conducted them, as pilgrims or as missionaries, into the most distant countries, and the accounts of their travels, and of the wonders they had seen, furnished matter for the pages of the monkish annalists. *Emon*, the Abbot of Werum, in his account of a crusade, presents us with the itinerary of these militants from the Low Countries to Jerusalem. *Saint Boniface* gives some information respecting the people placed to the east of the kingdom of the Franks and of the Slavones, to whom he went to preach by order of the Pope. With the assistance of the letters of this courageous apostle, King Alfred, in the ninth century, composed the first complete description of the Selavonian country. The missionaries and the commandants of the neighbouring frontiers brought intelligence successively of the nations upon the Oder and the Vistula. We now observe the Poles for the first time, they are noticed in the writings of *Ditmar* of Mersebourg, under the name of Poleni. It was attempted to plant the vine among the Slavi, a people whom the missionaries had been unable to convert, and *Saint Otho* was entrusted with the task. The inhabitants of the isle of Rugen did not treat him like the strangers whom they had repelled from their coasts, but received him gladly. This missionary, who had never heard of the Baltic, was greatly astonished at the vast size of this sea. — *Anscaire*, a monk of Corbie, under Louis le Débonnaire, penetrated into the country of the dreaded Normans, and travelled over Sweden and Denmark, which were before that time but little known. The detailed journal of his labours and dangers is now lost: but two centuries afterwards, Adam of Bremen laid it under contribution, and by uniting its observations with those he obtained from Sveno, king of Denmark, he compiled a very complete description of the kingdoms of the north.

After the downfal of the Western Empire, the Greek cities of Italy still preserved their communications with Constantinople, and imported into their own country the rich products of the East. In the tenth century, the Venetians had opened a trade with Alexandria, in Egypt. The people of Amalfi and Pisa followed their example: and the intercourse thus renewed with the East was still farther increased by the crusading mania that hurried the European nations in shoals to the Holy Land. Venice, Genoa, and Pisa, furnished vessels to carry them by sea, and thus brought into their own coffers all the wealth of the age. The effect of the crusade on geographical science was most beneficial. It diffused among the nations of Europe a greater knowledge of each other, and likewise made them acquainted with the countries and the people of Western Asia. Egypt, however, became shut against Europeans, in consequence of their hostility; but as a compensation for this loss, the Venetians and the Genoese opened up and carried on a caravan trade with India and China, setting out from the shores of Syria and the Black Sea. The countries, however, traversed by these caravans, were in a great measure desert, inhabited only by wandering tribes, without cities or cultivated ground. These journeys were attended with both danger and fatigue, but very imperfect records of them are now remaining.

Constantinople having been taken by the Latins in the fourth crusade, and held for several years by a Latin sovereign, the Genoese assisted the Greeks to recover their

empire, which they effected in the year 1260. In reward of this service, the Genoese obtained from the Greek emperor exclusive commercial privileges; and the Venetians, driven from the trade of the Black Sea, concluded a treaty with the Sultan of Egypt, in consequence of which Alexandria became again the emporium of Indian commerce, and so continued to be till the Portuguese discovered the route to India by the Cape of Good Hope, and opened up a direct communication with the countries that produced the so-much-coveted spices and drugs of the Indies—a consummation which the Venetians, and their worthy ally the Sultan, did all in their power to prevent, by sending a powerful armament to India to crush the Portuguese; but which expedition was signally defeated, and Venice and Alexandria fell in consequence into rapid and hopeless decay.

During these turbulent ages, great commotions took place in Asia, and the Mongols and Tartars, under Zingis-Khan and his sons, overran almost every part of Asia, and even made their way into Europe. Great alarm was the consequence of these invasions, and several ambassadors were dispatched to the Tartar chiefs by the Pope, and other Princes of Europe, to endeavour to pacify them, and induce them to turn their conquests in some other direction. For this purpose, in consequence of a convocation of the clergy held at Lyons by Pope Innocent IV. in 1245, six monks were selected from the new and severe orders of Predicants and Minorites. John de Plano-Carpini and Benedict travelled through Bohemia and Poland to Kiow, and thence by the mouth of the Dnieper to the camp of Corensa, a Mongol general. Thence crossing the Don and the Volga, they came to the camp of Baatu-Khan, who sent them to the Emperor. The other ambassadors, Asceline, with Friars Alexander, Albert, and Simon de St. Quintin, went by the south of the Caspian through Syria, Persia, and Khorassan, to the court of Baiju-Nojan; but it is only of the travels of Carpini that any account remains.

In 1253, William de Rubruquis, or Van Ruysbroek, by order of St. Louis, king of France, commenced a journey in Tartary with a similar object. He passed through the Crimea, along the Volga and the shores of the Caspian sea, and arrived at length at the great camp of the Mongols, where he saw Chinese ambassadors; and from them, and certain documents, he learned many particulars respecting the north of China, the most curious of which is, his accurate description of the Chinese language and characters. He returned by the same route, and arrived at Tripoli, in Syria, 15th August 1255. He is the first who mentions koumiss and arrack; and he gives a very particular and correct account of the cattle of Tibet, and the wild and fleet asses of the plains of Asia. He moreover confirms the account given by Herodotus, so many ages before, of the separation of the Caspian from every other sea, a fact that had till now been overlooked or forgotten.

But the most distinguished traveller of those times was MARCO POLO. While the most powerful kingdoms in Europe were trembling at the proximity of the Tartars, the Venetians and the Genoese seem rather to have rejoiced at the prospect of finding new markets for their commerce among the new conquerors, and several of the merchants of both States began to try their fortunes at the courts of the Tartar princes. Two noble Venetians, Maffio and Nicolo Polo, were amongst the first to make the experiment. Having purchased a stock of jewels, they crossed the Black Sea in the year 1254, and found their way to the residence of the great Khan of the Tartars at Canbalu, the modern Pekin, the capital of China, where they were favourably received. Returning home as ambassadors to the Pope from the Great Khan, after an absence of fifteen years, Nicolo found that his wife had died, leaving a son named Marco, who was now approaching the age of manhood. Accompanied by this youth, the two brothers again set out from Venice, on a new journey into the East, in the year 1271; and after a long and wearisome travel, they arrived at Pekin, where the Khan received them with honour, took young Marco under his protection, and made him an officer of his household. Marco adopted the dress and customs of the country, and made himself master of the four principal languages then in use in the empire. By his talents and accomplishments he soon acquired a great degree of influence at court, was employed on missions to the most distant provinces, and even held, for the usual period of three years, the high rank of Governor of Yang-chou-fou, in the province of Kiang-nan. After a residence of seventeen years, the Polos felt a desire to revisit their fatherland; but the emperor being unwilling to let them go, they contrived to leave China by stratagem, and returned by the way of the Indian Ocean and the Persian Gulf, whence they journeyed through Trebisond and Constantinople, and reached Venice in the year 1295, after an absence of twenty-four years.

Having thus traversed so great a part of both the continent and the seas of Asia,

a person of the talents and accomplishments, and high official rank of Marco Polo, must have possessed the most ample information concerning those distant regions. He seems nevertheless to have taken no measures to make his geographical knowledge extensively known, and to prevent it perishing with his own life; for it was only during a long captivity as a prisoner of war at Genoa, that one of his companions in misfortune procured from him that account of his travels which has come down to our times. The three Polos were the first Europeans who are known to have visited China.

The recital of Marco Polo is generally the result of personal observation, though reports of others are sometimes so intermingled with the text, that it is often difficult to distinguish what belongs to the traveller, and what to his informer; hence considerable uncertainty pervades the account of his route, and of many places which he visited. But still his text remains a rich mine of information. He dilates on the industry of Bagdad, on Georgia, Tauris, and Persia, and was astonished at their silk manufactures. Of Badakhshan, remarkable for the extraordinary salubrity of its climate, he celebrates the flocks of wild sheep, the swift horses, and the mines of precious stones, which supplied the balass ruby, the lapis lazuli, and other minerals. Our naturalist observed, that on the mountains of Belur, where the atmosphere was highly rarified, fire burned with less vivacity and strength. He accurately described the animal which supplies the musk, and the great pheasant. His details upon Bokhara and China are those of a geographer. He traversed a great portion of the provinces of this vast empire; and although he does not describe them all, he gives us a rapid sketch of its most important towns, of Cambalu or Pekin, of Nankin, and of the town of Quinsai, the largest in the world, and whose countless inhabitants consumed 24 quintals of pepper a-day. He mentions the commerce of Canfu with the Indies and the Spice Islands. He says nothing of tea, but does not forget porcelain. He mentions also the cowrie of the Maldives. He is astonished at the scarcity of silver in China, and at its high price compared with that of gold. He also speaks of their paper money, and of the dearness of furs; and coal, or black-stone, as he calls it, does not escape his observation. He has also preserved some curious details of the North of Asia. He was informed that the soil of these northern countries was composed of morasses, which continued to be covered with snow and ice for the greater part of the year; that instead of chariots, the inhabitants employed small sledges, which were drawn by rein-deer; and finally, that the most precious furs were there found in abundance. By these traits we recognise Siberia.

Marco Polo is the first who gave any account of Bengal to Europeans; but whilst speaking of its fertility, of the beauty of its cottons, of its sugar, and crops of rice and indigo, he seems to confound it, as well as Pegu, with the provinces of Cathay. His narrative includes the towns on the western and eastern sides of India, but is silent concerning those in the interior — an omission which was probably intentional, for he treats largely concerning many things in these countries. He was not ignorant of the castes in India, nor of the aversion of the Hindoos to the sea, nor of the manner of travelling in palanquins, nor of the voluptuous dances of the courtesans, nor of the scarcity of horses in these countries. Japan he named Cipangu, according to the Chinese appellation Shibyn. He places 7400 islands in the sea of Cin. He also knew by report of Great Java (perhaps the island of Borneo), which abounded in spiceries, to purchase which, it was resorted to by the Chinese. His smaller Java, where he remained five months, is unquestionably the island of Sumatra, and concerning it he supplies very abundant information. His notice of the island of *Malaiur*, and of the town of the same name, proves that he had heard of the Malays, who had spread themselves as far as the other side of Molucca. His navigation in the Indian seas appears to have led him to Nicobar and Andaman, whose inhabitants he characterizes as man-eaters, and cruel towards strangers. He also mentions Ceylon, and the pearl fisheries. As to Madagascar, and the eastern coasts of Africa, he knew them only from the Arabian writers, and amuses himself by repeating many of their fabulous stories.

On the traces of this intrepid traveller, and of the missionaries who had preceded him, other Italian merchants followed, among whom Pegoletti (1345) particularly deserves to be named. His itinerary is curious as a commercial route, and indicates the course which the merchandise from Azoph followed on its transit into China. This line traverses the middle and eastern parts of Asia, Azoph, Astracan, Saracanco or Suratschick, in Tartary; Ourgheuz, in Kharizm; Otrar, in the neighbourhood of Bokhara; Almalekh (Al Malik) in the Lesser Bukharia; Khami (Kan-Tcheou), near the great wall of China; and Cassai, perhaps Quinsay, now Hang-Tcheou-fou. The limit

of the travels of Pegoletti in the East, appears to have been Cambalu or Pekin, named *Gumalecco* in the itinerary. He describes his route in returning with equal minuteness, and it appears to have been the common one followed by the caravans of that time, when returning to the shores of the Mediterranean from India.

Religion, politics, and commerce, those three great stimuli to all great enterprises, continued, during the 14th and 15th centuries, to direct general attention to Central Asia. Among the travellers and geographers of the former part of this period, we shall only name Haïtho, Oderic of Portenau, and Mandeville, who have added few truths and many errors to the information accumulated by Marco Polo.

"*The Oriental History*" of Haïtho comprehends a general geography of the principal States of Asia, with the exception of the peninsula beyond the Ganges, and the neighbouring islands. Like Mandeville, he places a certain kingdom of *Tarse* between China and Turkistan. He gives the name of *Igours* to its inhabitants, among whom he recognised some professing Christianity, who made use of peculiar letters. His map of Turkistan, and his remarks on the manners of the Chinese, are alike distinguished by their fidelity. It is evident that he has put Rubruquis and the other travelling monks under contribution, and that he has availed himself of the writings of the Mongols.

Animated by an ardent zeal, and devoting himself to the labours of far distant missions, Oderic of Portenau proceeded towards Asia. Arriving at Constantinople, he crossed the Black Sea, landed at Trebisond, travelled to Ormus, and embarked at this port for the coast of Malabar, where he remained some time. The islands of Ceylon, Sumatra, Java, and Borneo, were successively visited by the indefatigable missionary. He landed upon the southern coast of China, and traversed that vast empire, from south to north, to reach Kambaleth (Pekin.) His route in returning was nearly that which Marco Polo had pursued in going; and it is equally difficult to follow him in this portion of his travels, which terminates in Thibet, and adds scarcely anything to the information previously acquired. Some new facts concerning the coast of Malabar, the culture of pepper, the ancient custom in India of women burning themselves along with the bodies of their dead husbands, and accounts of the religious practices of the Hindoos and the penances of their yogies, appear to be all that merits being extracted from his tedious narrative. One feature of his narrative is particularly remarkable: he affirms the truth of many of his recitals with the solemnity of an oath, and these portions are by no means the least difficult of belief. Sir John Mandeville, an English knight, traversed Asia at the same time as Oderic, and the agreement of their narratives leads us to suppose that they had copied from each other, or had derived their information from the same source. It was the fashion at that period to extol the wonders of the East; and Mandeville, wishing to become more intimately acquainted with them, left England in 1327, passed through France, and reached Palestine. Far from fighting like a good knight against the infidels, he entered the service of the Sultan of Egypt, and followed the Great Khan of Cathay in his wars against the king of *Manci* (southern China.) His itinerary is the same as that of Oderic; and he also draws from the geography of Haïtho, and transcribes largely from the old chronicles of the time. The contemporary monks have been accused of some of these additions, but probably Mandeville himself wished to improve upon the wonders of his predecessors. He finds his monsters in Pliny, and his miracles in the legend. In his work, we find islands inhabited by giants fifty feet high, and certain demons, who, from the tops of the mountains, vomited flames of fire upon the passing travellers; and also a certain lamb which was brought forth by a melon. He places his Prester John in the city of Susa, and the history he gives of him seems mixed with Indian traditions. In his travels there is very little real geography, with the exception of some new details concerning Egypt and Palestine.

Though the taste for that kind of fables continued to predominate throughout the 14th century, yet the narratives of the 15th century began to get rid of them. Ruy Gonzalez de Clavijo appeared at this time, as a truthful and well-informed traveller. Sent as ambassador to Tamerlane by Henry III. king of Castille, he embarked for Constantinople on the 21st March 1403; thence he crossed the Black Sea to Trebisond, and then by Armenia, the north of Persia, and Khorassan, to the city of Samarcand, near to which Tamerlane was encamped. He fully describes the fêtes which were given him by the conqueror, and this sketch may serve to convey an idea of the oriental history and industry of this period. In his work there are likewise very curious details of the commerce of the East. That of Samarcand was then flourishing, and the Russians and Tartars came to exchange their hides, furriery, and linens, with the silks, musk, precious stones, and rhubarb of Cathay. Tauris also, then rich and ener-

getic, received the same articles, and exchanged for them those products of Europe which were carried thither by the Genoese. Sultania also was still a considerable market, being the grand entrepôt between Persia and India. Clavijo is the first who makes us acquainted with this mode of commercial intercourse between India and Europe. He is also the first of the travellers of the middle age who rejects all prodigies from his narrative, and his work contains the only information we yet possess concerning some parts of Asia.

The work of Schildberger, a German, who followed Tamerlane in his conquests, is too vague and too incorrect to throw any light upon geography. More instruction may be found in the travels of Josaphat Barbaro, a noble Venetian, who was sent by the Republic to Tana, in the year 1436; and to Ussum-Cassam, king of Persia, in the year 1473. He traversed a great part of Tartary during his former absence, which lasted for sixteen years. After this he visited the principal towns of Persia, such as Shiraz, which then contained 200,000 inhabitants; Yezd, which was enriched by its silk manufactories; Strava, or Estrava (the Astrabad of our day), which was then bustling, commercial, and populous. His details concerning Russia are not devoid of interest. The duchy of this name was then without power, and far from populous, and Moscow inclosed vast spaces covered with woods. He exhibits Georgia devoid of its ancient civilization, and preserving no other trace of it than great corruption of manners. What he says of the tribes of the Caucasus, is unintelligible; and the names in this part of his narrative are too much altered to be at all useful.

Barbaro terminates this long succession of travellers, who, from the 13th to the end of the 15th century, traversed the interior of Asia; and it was by uniting their partial discoveries, and their different itineraries, that the geographers of those several epochs attempted to pourtray the whole of the earth. It was with the help of these incomplete materials that Martin Sanudo, Pietro Viseonti, the brothers Pizigani, Giraldis, Pareto, Bianco, Bedrazio, Bonineasa, Martin Brazl, F. Mauro, the authors of the voyages of the brothers Zeni and of Marco Polo, and some other geographers whose names are unknown, designed those rude charts, in which we find combined both the recent discoveries and the opinions of the ancients, distorted by ignorance, and accommodated to the necessity of filling up vacuities, or supporting absurd hypotheses. In many of these charts, Europe, Asia, and Africa, are represented like a vast island. Africa is terminated to the north of the equator, and in this position is washed on the south by the sea, as Eratosthenes and Strabo had believed, and whose ideas were still maintained in Western Europe.

These charts of Sanudo and of Bianco represent the greatest number of European kingdoms, and trace the States of the north which are joined to Russia by a long and very narrow tongue of land. The figure of Southern Asia is quite shapeless, and the Tartars occupy the north of this portion of the globe. We find, in other charts of the epoch now under review, some vague indications of the discoveries which were made in the west of Europe and Africa, in the 11th, 12th, and 13th centuries. There is an island named *Antilia* placed to the west of the Canaries in several of these charts, and especially upon those of Bianco, Bedrazio, and Pareto. The learned Buache has endeavoured to prove that this *Antilia* was no other than one of the Azores; and he partly grounds his opinion on the fact, that there appears to be a great proximity in their situations. The charts of Bianco might give rise to this sentiment, which is, however, overturned by the inspection of Pareto's map, with which the French geographer was not acquainted. On this latter, *Antilia* is found at a very considerable distance from the ancient world, and quite to the west of the Atlantic Ocean; and it is even maintained by some well-informed men, that it was a knowledge of this *Antilia*, fabulous or true, reaching Columbus, which prompted him to his glorious enterprise.

There may be also seen in the maps of the 14th century, a delineation of the eastern coasts of Africa, before the discoveries of the Portuguese, which might lead us to suppose that these bold mariners, in doubling Cape Nun or Non, and advancing southwards, only navigated a sea which had been already visited. A map of 1346, which is written in Castillian, represents Cape Bojador as a known point, and that navigators had passed it. A manuscript, preserved at Genoa, contains the record of an expedition which sailed from Majorca about the same time, with the purpose of reaching the mouth of a river called *Vedumel* or *Rui Jaura*, probably Rio-do-Ouro. The Canary Islands appear on this map of 1346, probably taken from the descriptions of the Arabs; and even the island of Madeira appears upon another map, under the name of *Isola de Legname*, the Island of Forests, the true meaning of the name it now bears.

Europe was now fast awakening from her long intellectual slumber, and the early years of the 15th century witnessed the first of those systematic attempts that resulted in the discovery of the way to India by Da Gama, and of the New World by Columbus. The Moors and the Arabs held possession of great part of Spain for nearly seven centuries. They conquered it almost at once, but were driven out very slowly. As one province after another was recovered by the Christians, each successful leader established a new kingdom for himself. Among these were the kings of Portugal, who, not content with expelling the Moors from the Peninsula, followed them into Africa. In 1415, King John I., attended by his sons and principal nobility, made a descent upon Africa, took Ceuta, and at his return, appointed his fifth son, Don Henriquez Duke of Viseo, to be governor of the new conquest. Don Henry was an able and active-minded prince, well versed in all the learning of the age, and he appears to have very early contracted a passion for maritime discovery. While residing in Africa, he received much information from the Moors respecting the interior and the tribes beyond the desert, and justly concluding that these might be reached by sea, he resolved to overcome by perseverance the difficulties of the navigation.

So early as 1406, Don Henry had already taken up his residence at *Sagres*, near Cape St. Vincent, with the purpose of gratifying his passion for discovery. His regard for religion also led him to endeavour to destroy or diminish the power of the infidels, and his patriotism to acquire for Portugal that Indian commerce which had enriched the maritime states of Italy. Hitherto the farthest limit of navigation along the coast of Africa was Cape Nun, scarcely 300 miles from the Strait of Gibraltar. In 1412, the prince sent out his first vessel to explore the coast, and continued to send one every year, till at last his mariners succeeded in doubling Cape Nun, and making their way to Cape Bojador, the dangers of which were too formidable to allow them to pass. Accident, however, effected what the skill of his mariners had failed to perform. In 1418, one of his ships was driven out to sea by a storm, and after they had given themselves up for lost, the crew discovered an island, to which, in token of their fortunate escape, they gave the name of *Porto Santo*. The neighbouring island of Madeira was soon afterwards discovered; and the Portuguese, emboldened by this first success, made their way from point to point along the coast, till at length their perseverance was rewarded by the discovery of the Cape of Good Hope, round which lay the road to India. This was effected by Bartholomew Diaz, in 1486, twenty-three years after the death of the illustrious prince to whose enlightened zeal all these discoveries were owing. Diaz gave the cape the name of *Tormentoso*, on account of the terrible storms which he had encountered; but the King, Don John II., at his return, ordered it to be called by the better-omened name of *Cabo de Boā Esperāza*, Cape of Good Hope.

In 1496, Vasco-da-Gama, with a fleet, passed the cape, and arrived at Calicut on the coast of Malabar. Under the skilful and intrepid conduct of Albuquerque, Da-Castro, and Almeida, the Portuguese, within a few years, explored the farthest shores of Asia, and established their dominion along all the coasts of the Indian Ocean. By and by they were followed by the Dutch and the English, who wrested their empire from them; and now, out of their wide-spread possessions in Asia, the city and small territory of Goa in India, and the town of Macao in China, are all that remain to Portugal.

The glory of Columbus, who only completed what Don Henry had so well begun, and so perseveringly carried on, has eclipsed the fame of his master. The discovery of America occupies so prominent a place in the history of the world, that it seems to be regarded as an isolated event, to be entirely ascribed to the genius of the man who made it. So far, however, was this from being the case, that the way had been prepared for Columbus by the preliminary voyages of the Portuguese. Every thing was now ripening for this great event, and America seems to have been destined to remain no longer hid from the eastern world; for, only seven years after the first voyage of Columbus, the Portuguese Admiral, Pedro Alvarez Cabral, who commanded the second expedition to India, was driven by the wind so far out of his course as to reach the coast of Brazil, till then unknown.

No part of the history of geography is better known than that which narrates the voyages of Columbus. He sailed from Palos, a small sea-port of Andalusia, on the 3d of August 1492; in thirty-three days landed on Guanahani, one of the Bahamas; and, on his return, discovered the large islands of Cuba and Haiti. In his second voyage he discovered Jamaica; in the third Trinidad, and the continent of America, near the Oronoco; in the fourth and last, he explored a part of the shores of the Gulf of Mexico. In the meantime the discovery of America by other voyagers was rapidly

advancing. In 1499, Ojeda, a follower of Columbus, sailed for the New World, accompanied by a Florentine of the name of Amerigo Vespucci; and this gentleman having published an account of the voyage, and modestly called the country he had seen AMERICA, after himself, the world adopted the appellation, and thus Columbus was robbed of the honour of giving his name to the new continent.

Immediately preceding the important events we have so rapidly narrated, the geographical knowledge possessed by the nations of western Europe was very limited. In fact, the somewhat vague knowledge of the far East, communicated by Marco Polo and other travellers, was almost the only addition made to what had been handed down from the Greeks and the Romans. Iceland, indeed, was known, but no ship had yet sailed beyond Norway; and all the countries to the east of the Black Sea and the Baltic were still unexplored, although some of them might be known by name.* But all at once the face of the world was changed. In less than thirty years after the first voyage of Columbus, the farthest east and the farthest west had met; and for the first time since the flood of Noah, the earth was proved to be, what geometers had suspected, a *globe*, and not, as Homer and Hesiod and most barbarians have imagined, a disk.

The way once shown, ambitious spirits were soon attracted to the new career of maritime discovery; and so early as 1497, or thereabout, for the time is not precisely known, Giovanni Cabota, a Venetian in the service of England, or his son Sebastian, explored a large portion of the coast of North America, from Newfoundland to Virginia. The object of these voyages was still to find a western passage to India. With this view, Pinzon (one of the captains of Columbus's first voyage) crossed the equator, and explored the coast of South America as far as the Gulf of Paria. In 1500, Corte-Real, a Portuguese, sailed towards the coast that had been explored by Cabot, visited Newfoundland, entered the Gulf of St. Lawrence, coasted Labrador as far as Hudson's Straits, to which he gave the name of *Anian*,—a strait which the geographers of the 16th century supposed to be the passage to the great ocean, the search for which led to many expeditions which contributed to the progress of geography along the coasts of North America. But it was not at this epoch that they sought this passage only by the north-west. Many attempted it by the south. The coasts of South America were accordingly soon explored, and Juan Diaz de Solis perished in a voyage of this kind, after having discovered the Rio-de-la-Plata. In 1513, Vasco Nuñes de Balboa, having descried the great Pacific Ocean from the top of a mountain on the Isthmus of Panama, proceeded to the coast, and, wading up to his middle in the sea, took possession of the wide expanse for the King of Spain.

The Portuguese, after their successful discovery of the East Indies, obtained from the Pope a grant of all the countries they might discover; and, after the third voyage of Columbus, the King of Spain applied for and obtained a grant of the same kind. But as it was necessary to draw a line between the two rival nations, the Pope fixed upon the meridian of $27\frac{1}{2}°$ west of Ferro; all the countries to the *east* of that line being to belong to Portugal, all to the *west* to Spain. The kings, however, of the two countries, for their mutual accommodation, fixed the line of demarcation 370 leagues west of the Cape Verd Islands; and, supposing the globe to be equally divided between the two favoured potentates, the Molucca Islands, which the Portuguese had already occupied, were clearly situate within the hemisphere belonging to Spain. The Portuguese would not give them up; and this dispute gave occasion to the first voyage round the world. Ferdinand Magellan, a Portuguese gentleman, who had served in India under Albuquerque, and visited the Moluccas, proposed to the king of Spain to sail to those islands by a westerly course, and thus establish the Spanish right to the possession of them, even upon the principle acknowledged by the Portuguese. The King of Spain, Don Carlos I. (better known as the Emperor Charles V. of Germany, a personage who never allowed any scruples of honour or conscience to stand in the way of his interest), or perhaps his ministers (for the king himself was then only nineteen), agreed to the proposal of Magellan, who accordingly sailed from

* The honour of having been the first discoverers of America is also claimed by the Norsemen, and with some show of probability, though we have not mentioned the circumstance in our text, as, properly speaking, it forms no part of the history of geography. The histories of Snorro-Sturleson, Torfæus, and Arngrim, and the Icelandic Chronicles, have all preserved the memory of the discoveries of Lief, the son of Eric Rauda, and Biorn, the son of Herjolf, who, in the year 1001, sailing to the south-west of Greenland, fell in with a country, to which, from its producing wild grapes, they gave the name of *Winland dat Gode*, or Wineland the Good. A colony was soon afterwards formed, and a regular trade carried on for some time between Winland and Norway; but ere long the communication was dropped; the colonists appear to have become extinct, and the situation of the country cannot now be pointed out. Of the certainty of the discovery there can be no doubt; but as it led to nothing, and was itself forgotten for nearly five centuries, it can hardly be allowed to detract from the well-earned glory of Columbus.

Spain in the year 1519, with five ships. In the course of his voyage he discovered and sailed through the strait that still bears his name, and made his way across the Pacific Ocean to the Philippine Islands, where he perished in a skirmish with the natives. His companions continued their voyage to the Moluccas, where they found plenty of spices, and then returning home by the Cape of Good Hope, reached Seville after an absence of 1154 days.

Twenty-six years had elapsed since the first voyage of Columbus, when vague rumours of the grandeur and opulence of Mexico excited the cupidity of the Spaniards. Grijalva, having been charged to make some observations on Yucatan, had discovered, in 1518, part of the eastern coast of New Spain; and Cortez forthwith prepared to invade this great country. In three years he conquered it; and, fifteen years later, Peru was conquered by Pizarro. Cortez was possessed of eminent talents; his mind was open to generous feelings; with much zeal he sought for a passage to the north of America, similar to that which Magellan had discovered in the south. He did not succeed, but made the discovery of California, and of the Vermillion Sea.

The search for this supposed strait was prosecuted with ardour, and produced some real discoveries. Rodriguez Cabrillo, a Portuguese in the service of Spain, pushed as far north as the 44°, and designated a cape there Mendocino. Francisco Galli advanced to 47° 30′, and discovered part of the coast which by the English of the present day is named New Georgia and New Cornwall. The English themselves entered into the pursuit, and commenced with great success. In 1578, Drake, a most skilful mariner, passed through the Straits of Magellan, buffeted by the tempest, and advanced into the South Sea, where unknown lands presented themselves to his view. He discovered, under the name of the Islands of Elizabeth, the western part of the archipelago of Tierra del Fuego; perhaps he even reached the southern extremity of America, to which, at a later period, the Dutch navigators assigned a name. The winds ceasing to detain him in seas he had no desire to explore, he sailed to the north, and visited the coasts already seen by Galli and Cabrillo, and which he called New Albion. He then crossed the Pacific, discovered a few islands, and arrived at Portsmouth, after an absence of 1501 days.

Twenty years afterwards, these coasts, as far as Cape St. Sebastian (42°), were examined by Sebastian Viscayno, who discovered the harbour of Monterey; and one of the ships of his squadron, commanded by Flores, went as far as the 43°, where the mouth of a river or bay appeared: this was at a later period converted into a strait, which received the name of Martin d'Aguilar; but neither the strait, nor the river, nor the bay, were ever afterwards again discovered.

We have already spoken of the voyages of Cabot and of Corte Real. Other navigators followed them; and if their attempts were equally fruitless, they had yet the effect of enlarging the domains of geography. Ponce de Leon discovered Florida; Jean Denis and Cosmant extended the chart of Newfoundland; Thomas Aubert reclaimed the first savages of Canada; Verazzani, in the service of Francis I., navigated the coasts of the same country, reached the 50° of latitude, and returned without establishing a colony. Jacques Cartier was the first to explore the gulf of St. Lawrence; he ascended the river 360 leagues from its mouth, gave to the country the name of *Nouvelle France*, and made the circuit of Newfoundland.

It was now the year 1534, and the Strait of Anian had hitherto always escaped discovery. For several years, all attempts were interrupted; but the belief of its existence was strongly maintained by most navigators, and soon those of England renewed their research. In 1577, Frobisher, in seeking for this passage, again found the southern part of Greenland, which he called Westfrieseland, and passed through a strait situated in the 64° of latitude, formed by some islands in Hudson's Bay, a strait which has been erroneously placed in Greenland. His countrymen pursued the same course. Sir Humphry Gilbert reached the harbour of St. John (in Newfoundland), and examined the country which extends southwards. The unfortunate Raleigh visited a part of the coast of North America, which received the name of *Virginia*, in honour of Queen Elizabeth. Other navigators of the same kingdom pushed far north of these latitudes. Among the most fortunate and intrepid of these was John Davis, who distinguished himself by continuing the labours of Frobisher on the west coast of Greenland, in 1585–1587. During his first voyage, he penetrated as far as 66° 40′, and discovered an arm of the sea, called from him, *Davis Straits*. During another voyage he advanced to Disco Island, and on the west coast discovered Cumberland Straits. The ice proved an impenetrable barrier between Iceland and East Greenland, and the most advanced point he reached seems to have been Sanderson's Hope. Twenty years later, Hudson, one of the most eminent mariners of modern

times, visited these frozen regions, and continued the investigations of his predecessors. During his first voyage he ascended to a higher latitude than had previously been attained on the western coast of Greenland; in 1609 he discovered the river in New York which bears his name; and, in the year following, the great internal sea, called from him *Hudson's Bay*, where he was abandoned by his crew, and left to perish in a boat. Thomas Button was sent for the purpose of relieving him; but the journal of this navigator has not been published, although it appears that he traversed a portion of Hudson's Bay, discovered the river Nelson, and made some important observations on the tides.

This sea was explored in the year 1615 by Bylot; and he returned the following year in search of the north-west passage. William Baffin accompanied him as pilot, and this voyage is one of the most remarkable which the history of geography presents. Bylot and Baffin penetrated beyond Davis Straits; they sailed along the coast northwards, and there discovered Horn Sound, Cape Dudley Diggs, Hakluyts Island, Sir Thomas Smith's Sound, Cary's Isles, and the Sounds of Alderman Jones and Sir James Lancaster. They advanced beyond the 74° of latitude, and their discoveries were doubted; but Captains Ross and Parry, two centuries afterwards, proved their accuracy. Those who immediately followed them executed nothing of much moment. This was true of Fox's expeditions: the voyage of the Dane, Jean Munk, disclosed a new gulf, which he named *Mare Christianeum*, and a coast, which he named New Denmark. These discoveries are to be found in Welcome Bay.

During this period (1608), Samuel Champlain founded the French colony of Canada; and sixty years afterwards the English Hudson's Bay Company was established.

A desire to discover a shorter route to the Indies had excited all the endeavours we have just been enumerating; and it was with the same hope and end that other attempts were made by the north-east of Europe. It was imagined, that through these high latitudes they would soon reach the Chinese seas, and thus abridge the distance to the Spice Islands. Connected with the execution of this bold idea, and the hazardous undertakings to which it led during the 16th and 17th centuries, we find the names of Willoughby and Chancellor, Stephen Burrows, and Arthur Pet, Charles Jackman, Barentz, Hemskerk, Cornelissen, Ysbrantz, Bennel, Jonas Poole, and others. If the icy barrier resisted the efforts of all these intrepid mariners, it could not prevent them from penetrating into the permanent abodes of winter. The White Sea, which had been visited by Ochthere in the eighth century, and afterwards forgotten, was discovered of new, and opened up a new commercial route between Archangel and England and Holland: the northern coasts of Nova Zembla were discovered and visited; the Strait of Vaygatz was explored; and Spitzbergen, the last known land of the north, appeared upon the maps of the Polar Sea.

We have already remarked that Cortez had attempted to discover a passage by its north-west coast; and it would appear that about the same time he had thoughts of exploring the great ocean; at least the second voyage of Grijalva, which was undertaken by his orders, seemed to have had this destination. The result is but inaccurately known. It has been thought that he discovered a portion of Papua, as it was supposed that Saavedra discovered New Guinea. The voyage of Magellan had demonstrated that it was possible to navigate from the coasts of America to the eastern shores of Asia. It was conceived that, in the west of this vast extent of sea, there existed rich islands of gold, and in the south a great continent, which was made to approximate the equator, more or less, according to the system of the geographer who represented it.

The expedition commanded by Mendana, and which sailed from Callao de Lima on the 10th January 1568, was less meant to verify these conjectures, than to reach the Moluccas by the shortest way. Mendana took his course directly across the great ocean, and calculated it at 1450 leagues; and the discovery of many islands rewarded his perseverance. In this group, which he placed between the 7° and 12° of southern latitude, the land or island of Guadalcanal, and the islands of St. Christoval and Isabella, were particularly distinguished. It was on this land that the first mass was sung which was heard in these islands of the southern ocean. This voyage, the most important of those undertaken by the Spaniards since the discovery of the New World, gave origin to the greatest number of those fables with which their historians entertained Europe for more than a century. They did not forget to identify these new islands with the golden islands, of whose existence they had satisfied themselves; they gave them the name of the Isles of Solomon; and their position was for a long time one of the most uncertain and obscure points in geography. De Brosses, Pingré, and

Dalrymple, have made this archipelago travel from Tierra del Espiritu Santo (Holy Ghost Land) to New Britain, with which the learned Englishman supposed it identical. It is now believed, owing principally to the labours of Buache and of Fleurieu, that the Isles of Solomon are no other than the land of Arsacides of Surville, or the New Georgia of Shortland, of which Admiral d'Entrecasteaux completed the survey. The object of the second voyage of Mendana was to establish a colony on these isles of Solomon; but the art of determining the latitude and longitude was at that time so much in its infancy, that the Spanish navigator could not find his own discovery. However, he made new ones. He had the honour of first naming the Marquesas de Mendoza; he visited the islands of St. Barnardo, which Byron, in 1767, called Danger Islands; he also discovered the island of Santa Cruz, which Carteret afterwards named *Egmont*, and which is the largest of those that form the group of Queen Charlotte's Islands.

It was in this last voyage that Quiros, the friend and companion of Mendana, confirmed the idea of the existence of a southern continent, which, we have seen, continued to be the vague belief of the geographers of the day. Neither Magellan nor Gallego had suspected a continent in this part of the world, nor had the search for it been the object of any particular expedition; but the discovery of Santa Cruz made Quiros believe that this unknown continent had at last been found. In two memoirs which he presented at the time to D. L. de Velasco, we find for the first time a scientific and learned discussion upon this great question, which did not cease to be agitated till the days of Cook, Surville, and Weddel. Geography was indebted to Quiros for the discovery of a great many islands, and after his days the Pacific no longer appeared to be an immense waste. Had he been encouraged and supported by a government solicitous for true glory, and less avaricious for gold, Quiros would have been the Columbus of the ocean. The greatest number of the discoveries of this able navigator have since been confirmed; his *Dezana* was rediscovered in the Onasbrugh of Wallis; his island of *Sagitaria* corresponds to the Otaheite of Bougainville and Wallis; his *Neustra Senora de la Luz*, to the *Pic de l'Etoile* of Bougainville; and his *Tierra Austral del Espiritu Santo* is the same as the New Hebrides of Cook.

To this voyage of Quiros we must attach that of Louis Vaez de Torres, one of the captains of his fleet. Having been separated from the admiral in a storm, on quitting *La Tierra Austral*, he skirted along the shores of an extensive region for the distance of 800 leagues, and then reached the Phillipines, where he gave an account of his discoveries. As in this navigation Torres could not for 800 leagues coast along any other place than the southern shores of New Guinea, it follows that he was the first to pass through the strait to which Cook, its second discoverer, gave the name of *Endeavour Strait*.

Such were the concluding efforts of Spain to increase our acquaintance with the world: Mendana, Quiros, and Torres, terminate the list of those intrepid navigators of the bright days of her power.

But before this, the patient Dutchman, indefatigable and brave, had sallied forth among the northern ice; he had spread his sails in the eastern seas, in the Indies, and in the Molucca Islands he had established numerous factories. The founding of these establishments manifests that it was less with the view of cultivating science, than that of promoting commerce, that he embarked in these pursuits. It was with the same view that he followed out the discoveries of the Spaniards in the great Pacific. With the intention of reaching the Moluccas without doubling the Cape of Good Hope, the celebrated voyage of Le Maire and Schouten round the world, in 1615, was undertaken. For the first time the southern extremity of America was passed, and *Cape Horn* (so called from the town of Horn, from which they had sailed), became, as it were, the fellow of the Cape of Good Hope. Statenland was discovered; and *Le Maire* had the honour of giving his name to the strait which separates this island from Tierra del Fuego. The quickest and safest route was thus discovered, and the voyages round the world have ever since lost their character of danger. The navigation of Le Maire in the Pacific brought a sea spotted with islets and rocks to light, which was named the Bad Sea (*Mer Mauvaise*), at no great distance from the dangerous islands of Bougainville. He also discovered, in the northern part of the same group, the islands *Sonder-Grondt* (without bottom — so called because they could find no soundings along its coast), *Waterland*, and *Vlieghen (Fly) Island*. His course then led him between the Friendly and the Navigators Islands, where four small islands still preserve the names which were then for the first time given them, viz. the Traitors, the island of Good Hope, the Cocos, and De Hoorn. It is to be regretted, that in changing the course which had hitherto been followed,

and turning their head northwards, the prudence of Schouten prevailed over the zeal of Le Maire; for had they continued in the same latitudes, the honour of finding again the lands of Quiros, and of reaching the eastern coast of New Holland, would have rewarded their perseverance.

The course of his countryman Tasman, in 1642, was much better chosen. This great navigator, who was instructed to ascertain the extent of that great southern continent, of which the Portuguese and several Dutchmen had already visited certain portions, fully justified, by his numerous discoveries, the confidence which was reposed in his talents. He enlarged the limits of geography, by examining the northern Van Diemen's Land as well as the southern; also Van Diemen's Island, and the western coast of New Zealand, which he named *Staten-landt;* he also surveyed the Friendly Islands, the Fidji Islands, and many others. He gave the name of New Holland to the north-west part of this great continent, which he had been the first to witness; and he commenced the examination of the east, north, north-west, and west coasts of this vast land. By his first voyage he dissipated the notion that those portions which Edel, Leeuwin, Carsten, Nuyts, and De Witt, had previously discovered, extended indefinitely to the south and east; and in his second, he determined the extent of the great gulf of Carpentaria.

The name of Van Diemen, which Tasman gave to several of his discoveries, was that of the governor of Batavia; and this statesman richly merited the honour. He was solicitous of extending the possessions and commerce of the Company who employed him, and geography reckons him as one of its protectors. It was he who, after the first return of Tasman, in 1643, directed Captains Vries and Schaep to proceed to the north of Japan, and in these boisterous seas to endeavour to make discoveries. Before this voyage, geographers represented the famous land of Jesso in a very extraordinary way: they made it a continent or very large island between Asia and America, and even joined it to what was then called Russian Tartary. Meanwhile the Chinese missionaries had furnished some details concerning the island Saghalien, and concerning the existence of a strait called *Tessoi*. Le-Pere-des-Anges had stated that the land opposite to the island Saghalien was called the land of Aino Moxori, and that it was separated from Japan; but doubts still existed concerning the junction of Jesso with Saghalien. We shall erelong find that La Perouse dispelled these doubts, and that Broughton pointed out the strait of Sangaar such as it is now known.

The discovery of some of the southern Kuriles also belonged to this expedition of Captain Vries.

Between this last voyage, and the first Spanish ones to the Caroline Islands, to which little attention was paid, forty-three years, quite barren of discoveries, passed away; and the 17th century appeared to be manifesting the same inaction, when Dampier, who united all the boldness of a buccaneer with the science of a geographer, appeared on the scene. We owe to this celebrated navigator our first knowledge of the Bashee islands, of which he has given a complete description. He discovered, in 1699, and 1700, Shark's bay, in New Holland, and surveyed the north-west part of this continent to the extent of three hundred leagues, which more lately has been examined by the French vessels Le Geographie and Le Naturaliste, and, more lately still, has been visited by Captain King. He was the first to penetrate the strait which separates New Britain from New Guinea, and which bears his name. He very much increased our acquaintance with this great island, and showed the extent of its northern coast; he also made some other minor discoveries in these seas, and upon the shores of New Ireland: he likewise reached Ceram by a course which till then was unknown. Such is a review of his labours.

During the 16th and 17th centuries the inhabitants of Western Europe were not the only people who were engaged in the search for undiscovered lands. The same adventurous disposition animated the inhabitants of the shores of the Frozen Sea. In 1636, Russian vessels descended the Lena, and coasted along the shores of this terrible northern ocean. The shores of the eastern ocean were thus reached, in 1629, by Dimitri Kopilaw; and, in 1646 and 1648, Bomyschlan and Deschnew went from the Kovima to the Anadyr, and doubled Cape Tchoukotskoi. These remarkable voyages were then but little known, and many a long year elapsed before these maritime discoveries of the Russians were turned to any account.

The ideas of the Greeks and Romans regarding the configuration of the earth had now disappeared, from the day in which Columbus discovered the New World, and Gama passed those limits which had arrested the genius of the ancients, and Magellan had succeeded in convincing the multitude that the earth was a globe. The necessity of abandoning the vague plan followed by the authors of the early planispheres was

then perceived, as well as the necessity of determining the position of places by finding their distance from the equator or from the first meridian; but many accurate observations were required before this plan could be executed.

The system of Ptolemy was too deeply rooted speedily to give way, and it was at first attempted to effect an accommodation between it and the newly discovered facts. The surveys of the pilots and hydrographers who accompanied the first navigators, were had recourse to, but without any great profit; because the required science was wanting, by which to take the benefit of these limited observations, and, taken detached, they appeared as errors in the general maps. The maps of Appian, Ribeiro, and Gemma Frisius, were the first which represented the newly-discovered hemisphere. Sebastian Munster collected in his atlas all the discoveries of his time, and received the name of Strabo from his contemporaries. Finally, Ortelius infused some order into the science. He was the first who separated the modern geography from the ancient: he did much for both, and displayed much erudition even in his cartography. The map of the world, which he placed at the commencement of his *Theatrum Orbis Terrarum*, exhibits a system very different from that of Ptolemy. Mercator, though less learned, yet being a better mathematician, employed with much decision the few facts which existed at his time; and he is the true founder of scientific geography. He placed it upon a solid foundation, and left it in the hands of Cluver, Riccioli, and Varenius. Thanks to these celebrated men, erudition, astronomy, and high physical science, now became the auxiliaries of geography: it was then seen what it would be, when, rich in facts, it left the path of vain conjectures. Sanson, Blaeu, and Buræus, followed with success the footsteps of their masters, and began to exercise much care in the details of geographical charts, the general appearance of which likewise was much improved. Statistics, too, a secondary branch of the science, the commencement of which we have seen in the middle ages, engaged the attention of Sansovino, Bativo, and Davity. Germany was not long before it manifested its superiority in this department. Conring, who prosecuted it with ardour, soon did more and better than had been done before him. The Elzevirean Republics, which are a specimen of the statistical labours of this age, prove that the limits of that branch were as uncertain as incomplete.

At the beginning of the 18th century, geography was indebted for its progress to a zeal independent of conquest, and free from all mercantile consideration. Noble and perilous enterprises were undertaken without any other object than the increase of the knowledge already acquired, and to convey to unknown nations the benefits of arts and industry; accurate criticism and minute examination, as well as advanced civilization, influenced research, and illuminated it with their lustre.

About the year 1722, the belief of southern continents, still in all its force, led to the voyage of Roggeween, who thought he had discovered one in Antartic New Britain, but which turned out to be nothing more than one of the Falkland Islands. He also imagined that the ice-fields which he encountered at the 62° south, were attached to a continent; a second error, which Debrosses subsequently adopted. Roggeween named it Easter Island, and it was supposed to be the land seen by Davis; this was the opinion of Cook and Dalrymple, though not that of Fleurieu. His navigation of the Mer Mauvaise brought to light a group of islands, which were a portion of the Palliser Islands of Cook, but which, at the time, only led to the not very important discovery of the islands of Bauman, Roggeween, Tienhoven, and Groningen, the very position of which is uncertain, but which Fleurieu placed between 8° and 15° south, and between the 158° and 160° west from the meridian of Paris.

The course of Roggeween was badly selected; he crossed that of Quiros, and nearly followed that of Schouten, than which he could not have done worse; although this reflection might be made against several of the navigators who followed him. It would seem, that in quitting a western course, and striking towards the north, they were anxious to avoid New Holland.

Nevertheless, the time in which great discoveries were to be made in the Pacific Ocean had now arrived. Lands without number were about successively to appear, like a vast archipelago between Asia and America. Byron, Wallis, and Carteret, succeeded one another in this career. The discovery of the Falkland Islands, and of several smaller ones, such as the Danger Islands, and that of Disappointment, are the results of the voyages of the first of these. The other two occupy a more important place in the annals of the science. Wallis again found, in the beautiful Otaheite, the Sagitaria of Quiros, and made us acquainted with the southern chain of the *Dangerous* Archipelago. Carteret touched at the island Santa Cruz of Mendana, approached the famous Isles of Solomon, and first passed through St. George's Channel

between the New Britain of Dampier, and the land which from that time received the name of *New Ireland*.

At the same time that these fortunate navigators were giving names to unknown lands, and opening new paths for the navies of Europe, Bougainville, who had passed the early part of his life in camps, and who devoted the rest to gaining distinction on the sea, sailed through the *Dangerous* Archipelago of Wallis, and landed upon the shores of that Taïti of which he fancied himself the original discoverer. This would have been an additional honour: but sufficient remains for his glory, and to procure for him the gratitude of his countrymen. He was the first Frenchman who, by circumnavigating the globe, enriched science with important discoveries. He made known, and for the first time named, the beautiful Navigator's Archipelago, the lands de la Louisiade, the north-west coast and the northern point of the Archipelago of Arsacides or Solomon; and refound in the great Cyclades a part of the Tierra Austral del Espiritu Santo of Quiros.

It is sufficiently absurd that the belief of an imaginary island, near to America, and rich in the precious metals, should have revived, at the interval of two centuries, and should have led to the expedition of Surville in 1769, as it gave birth to that of Mendana in 1569; and it is another caprice of fortune, that the same error should have conducted both navigators towards the same regions. The identity of the Archipelago of Solomon's Islands and that of the Arsacides, seems to be all but demonstrated. In 1769, Surville made the discovery of the greatest part of the line of coast on the south-east, east, and north-east, of those lands which Lieutenant Shortland discovered on the opposite coasts in 1788.

But the first navigator of the 18th century, Cook, whose name is universally popular, had already appeared in the Pacific. His labours were immense, and they possessed the highest scientific interest; whilst it is only just, at the same time, to add, that he did not make so many discoveries, in the accurate sense of the word, as improve and digest that which was already known.

His first voyage exhibited New Zealand in its true light and bearings. He proved it was composed of two islands, and he gave his name to the channel which divided them. He discovered a portion, and examined with care the greatest part of the eastern coast of New Holland, commencing at the northern point of the strait which divides it from the island of Van Diemen, which had not previously been perceived, and proceeding to the northern extremity of that long line of coast, which then received the name of New South Wales.

His second voyage, which was undertaken for the purpose of examining into the existence of a southern continent, nearly resolved a question which had been agitated for two centuries. It was by it proved that there was no land, of any extent, on this side of the 71° of southern latitude. In this memorable voyage he visited many parts of New Zealand, and of the Archipelago St. Esprit of Quiros; he also surveyed with care the Society and the Friendly Islands, and discovered New Caledonia on its eastern side.

His third expedition had also in view the determination of certain great geographical questions. The voyages of the Spaniards to the north of California, and of the English in Hudson's Bay, had still left the north-western parts of America in obscurity; and there was also a want of accurate information concerning those parts of Asia which approximate to the New World; and the possibility of entering the Pacific from Hudson's Bay, and the existence of a passage into it by the north of Asia, still remained undetermined. The Russians, whose labours during the 16th and 17th centuries we have recounted, had, in fact, endeavoured to resolve one part of the problem. During the earlier part of the 18th century, they had continued their expeditions on the northern coasts of Siberia, and then, in 1724, had perceived a great polar land; but both the charts of d'Isbrand Ides, of 1693, and those of Strahlenberg in 1736, gave a very imperfect representation of their discoveries.

Behring, in 1728, after having traced all the northern coasts of Kamtshatka, supplied the first notions concerning the separation of the two continents. His second voyage, in 1741, led him much too far to the south on the American coast, where he discovered the Cape St.-Elias, and the same uncertainty remained concerning the extent of the sea which separated it from Asia. In fact, it was not determined whether the lands which were opposite to Kamtshatka, and of which a vague apprehension existed, formed a part of America, or were only intermediate islands between the two continents. Such was the state of the question in Europe, when Cook offered his services in resolving it. His navigation along the north-west coast, proceeding from 30° north of Cape Mendocino up to Behring Straits, was not so carefully conducted as

to decide that the American continent within these limits was not at all interrupted: but if he did not prove this fact, he very unhesitatingly conjectured it. In his progress into the middle of the straits, he did not lose sight of the American coast; and had not the ice arrested his progress in lat. 70° 44′, and prevented his pursuing his course northwards, he would have explored the Polar Sea, and determined the trend of the northern coast of the New World.

This last voyage of the great navigator augmented, in other points, the mass of geographic information. Cook undertook the examination of New Zealand, and of the Society and Friendly Islands; he also increased our knowledge of the peninsula of Alashka, and of the Aleutian Islands, first named in 1745 by Novozilzoff. He discovered the Sandwich Islands, and was remarkably delighted with his success in this last particular, he delights to dwell, in his journal, on the beauty of these islands, and the advantages which they promised to mariners; and of course did not foresee that he was actually writing an eulogium upon his tomb, and that he was doomed soon to perish under the blows of those who were now receiving him as a god. The whole world seemed to sympathize in his fate.

But far from repressing the zeal of mariners, this remarkable event only afresh rekindled it; and a desire to acquire renown in maritime discovery became the ambition of all the enlightened nations of Europe. Louis XVI. who was anxious for the well-being and the glory of his people, and whose acquaintance with geography was both extensive and profound, originated the expedition of La Pérouse, and himself traced out the plan. Some of its scientific results are known: but the fate of the French navigator and of his intrepid companions long remained like one of the mysteries of the dead; nor was it till lately ascertained what land saw their shipwreck, their agonies, and death.

The efforts of La Pérouse on the north-west coast of America, in 1786, added additional information to that which Ayala, la Bodega Quadra, and Captain Cook, had procured. This coast, from Mount St. Elias, in about 60°, was investigated by going southwards as far as Monterey, and a harbour, which had escaped the observation of Captain Cook, received the name of Port des Français; and many other parts, which had only imperfectly been looked at, were now examined with care. The second important part of the expedition of La Pérouse, in 1789, was the survey of the seas of Japan, which includes that of the islands of the same name, and of the eastern coasts of Tartary; and here he did much for the science, as all the doubts and uncertainties which had hitherto prevailed concerning this part of the globe were nearly entirely dissipated. The seas between Tartary and Japan were examined as far north as 51° 30′; and the separation of the island Saghalien from the coast of Tartary, by a channel which became straiter and less deep as it advanced to the north, was finally determined. The discovery of the Straits of Pérouse, to the south of Saghalien, accomplished the demonstration that Jesso was an island, being on the south separated from Japan by the Straits of Sangaar, which had long been known. By these researches also, the northern coast of Japan resumed its true position as to the latitude.

These seas were again explored by Krusenstern and Broughton; the latter of whom, in 1797, passed through the Straits of Sangaar, and laid down the coasts as they are known at the present time; he also ascended some leagues farther northward than La Pérouse, and supplied geographers with ample grounds of discussion, by maintaining that the alleged straits between Mantchouria and Saghalien had no existence, and that this land is a peninsula. Krusenstern did not come near this channel; but he visited that which is to the north of the mouth of the river Saghalien; he also carefully surveyed the south-east and northern coasts of the land which bears this name, and also the western coasts of Jesso island, which preceding navigators had not visited.

What remained unfulfilled of the instructions of La Pérouse was performed by d'Entrecasteaux, who surveyed the whole of the western coasts of New Caledonia and of the island of Bougainville; also the northern part of the Archipelago of Louisiade, and nearly 300 leagues of the south-west coast of New Holland; that is to say, the whole of the land of Leeuwin, and nearly the whole of that of Nuytz. He likewise discovered, to the south of Van Diemen's Land, a number of channels, roads, and harbours. He determined the identity of the islands of Solomon or of Mendana with the land seen by Surville and Lieutenant Shortland.

Whilst he was engaged in this voyage, commerce, by its useful toil, was doing much to advance geography. From 1785 to 1792, among the English, Hanna, Lawrie, and Guise, Meares and Tipping, Portlock and Dixon, Barklay, Colnett and Duncan, Grey, an American, and E. Marchand, a Frenchman, attracted to the north-west coast of America by the fur trade, made some discoveries there. Marchand also supplied

some additional information concerning the group of the Marquesas, and carefully examined the Sandwich Islands and the Mariannes. During the same period, Billings and Saritcheff, in the service of Russia, Bustamante, Galiano, Martinez, and Haro, in the service of Spain, also visited the same American coasts as far as the 60° north. Malespina surveyed some parts between 57° 1′, and 59° 94′, and determined many positions in the neighbourhood of Nootka Sound. This separate and piecemeal information, however, did not determine the question of the continuity of the continent, which was thus reserved for the persevering zeal of Vancouver.

This able mariner, the companion of Cook in his second and third voyages, examined with the greatest care the whole of the north-west coast of America, from California to Cook's Inlet. He discovered, that to the north of the 49°, the whole coast is skirted by innumerable islands, and that the inlet of Jean de Fuca only terminated in a strait which led back to the ocean. In passing the island of Quadra and Vancouver, he observed that to the south of Monterey the country presented a double chain of mountains, of which that nearest to the sea is the lower. He examined with minute care the Archipelago of King George, and that of the Prince of Wales, the Admiralty Islands, &c. This voyage, in which the Spaniard Quadra took a part, demonstrated that the idea of a north-west passage was a chimera; and that no communication fit for the transport of vessels existed between the Pacific and the interior of the continent, nor were there any practicable channels between this sea and the Atlantic. But the negative solution of this question was not the only result of these expeditions: the exploring of New Holland along a line nearly as extended as that surveyed by Entrecasteaux, the discovery of King George's Sound — of the island of Oparo, whose inhabitants resembled those of the Friendly Islands — and the accurate survey of the Sandwich Islands, were labours which would have been sufficient to signalize a less distinguished navigator than Vancouver.

The voyage of Kotzebue, in one of its most important results, connected itself with this last expedition. This able officer of the Russian marine took the *Rurik* through Behring's Straits, and found, to the east, in latitude 67°, a bay which extended southwards to 66°. To him also we are indebted for the discovery of Radak Islands, which form the north-east extremity of the Mulgraves, a chain which connects the Carolines with southern Polynesia, and which till then had only been noticed in passing.

But leaving the coasts which were thus made known and determined, the zeal of navigators led them to make original investigations, and we are now to trace the progress of geography on the shores of New Holland. Bass and Flinders made their appearance there about the close of the 18th century. Furneaux, the companion of Cook, had without doubt seen the large strait which separates Van Diemen's island from the main land. Bass observed it alone in 1798. Flinders and he united their exertions to make an accurate survey of the channel, and of the coast of Van Diemen's Land. Flinders explored the bays of Hervey and Glasshouse, and, in the years 1801, 1802, and 1803, the southern coasts of New Holland, the Straits of Torres, and the Gulf of Carpentaria, and thus proved himself one of the best sailors and most distinguished hydrographers of his day.

Whilst Flinders was executing with so much success and ability the operations he had undertaken, *Le Géographé* and *Le Naturaliste*, commanded by Baudin, and with whom were Freycinet and Peron, were sailing in the same seas, and meriting praise by observations not less difficult, nor less ably conducted. It is especially on the west and north-west coasts of New Holland that we must look for the principal results of the French expedition, which, besides, enriched every branch of natural history with almost an inconceivable number of specimens in the three kingdoms of nature. To it, also, geography is indebted for accurate statements with regard to Timor, and some other neighbouring islands.

It was reserved for Captain King to do for New Holland what Vancouver had done for the north-west coast of America; and during four years, from 1818 to 1822, he prosecuted his painful and laborious investigations. He has pointed out a sure and easy course in Torres Straits, and determined a line of coast, 690 miles long, between Cape Hillsborough and Cape York. The geography of the north coast, and of a portion of the north-west, has been completed from the Wessel, beyond Cape Villaret, as far as George the Fourth's Harbour. He also pointed out a long succession of archipelagoes, running along at no great distance from the continent; and his observations on the tides in this neighbourhood have led him to conjecture, that in this line of 510 miles behind these archipelagoes, and thus almost unknown, great inlets of the sea must one day be discovered.

With the voyage of Captain King, above alluded to, is connected the increase of our geographic knowledge concerning the Mariannes, Timor, Ceram, the Moluccas, and the Caroline islands. Many of the islands of this archipelago, not indicated on the chart, were visited by *L'Uranie*. A new island, surrounded by dangerous reefs, was discovered to the east of Tonga, and a great number of positions were rectified, and, amongst others, those of Danger Islands, Pylstart, and Howe.

The expedition of Captain Duperrey, during 1822–1825, connected itself with the preceding voyage, of which, in some degree, it was a continuation. The results obtained on this occasion were not of less scientific importance. If La Coquille, like L'Uranie, made no brilliant discoveries — the happy lot of the mariners of the 18th century — it was only because the possibility of encountering new lands necessarily diminished every day. The great features of the whole globe are now known, and details alone remain as objects of pursuit: we are in the age of perfecting knowledge hastily acquired; and it is by the excellence of our instruments, and our methods of observation, that the navigators of the 19th century must acquire their celebrity.

The expedition of La Coquille has at the same time enriched our charts with the addition of some new discoveries. The Islands of Duperrey, the Isle d'Urville, in the neighbourhood of the MacAskill islands, and the island of Clermont-Tonnerre, at the western extremity of the Dangerous Archipelago, were all named for the first time. This vessel also revisited a great many places in different parts of the globe, and rectified many errors which existed concerning them. As among the more important, we shall mention its visit to the Serles Islands, and the Dangerous Archipelago; to Ine, Vayag, Syang, and Waigieou in the Papuan Archipelago; to Joyi and Guebe, in the Molucca Archipelago; to Dog, Volcano, Weter, Babi, Cambi, Ombai, and Penter, belonging to the Timorian Islands; and to Borabora, and some other points of the Society Islands. During this expedition, the geography of the Carolines was also reviewed with care. The island called Strong, or Oualon, first seen by the American Captain Crozer, was resorted to for the first time by a European vessel; and St. George's Channel, between New Ireland and New Britain, as well as the north-east port of New Zealand, were examined and ascertained with precision. Such is a dry enumeration of some of the principal results of the voyage of Captain Duperrey.

Whilst the two French navigators were ploughing the seas, and examining the islands of Western Asia, Mr. George Smith, the captain of an English merchant vessel, penetrated as far as the 62° 30′ south, and discovered, under west longitude 62°, a group of islands which he designated South Shetland. They were without inhabitants, and almost without vegetation, and might almost be regarded as the last southern limits of animated nature. But the point which Captain Smith had reached was very soon surpassed by Captain Weddel, who had formerly frequented the southern seas. After visiting South Shetland, he discovered to the east of them the South Orkneys; and then navigated, amidst icy islands, as far south as 74° 15′, under longitude 35° 20′ west, into an open sea, where he observed many whales, and countless numbers of sea-fowls. Other islands have since been discovered by Captain Biscoe.

In recounting the labours of a period which puts no limits to its investigations, our transitions must be rapid, like the march of science — and sudden, as we desire to embrace everything. We must transport ourselves, therefore, from the Southern Ocean to the Polar Seas, where the most courageous endeavours succeeded each other. By naming Behring, formerly mentioned, Morovief, Offzin, Roskelef, Feodor Menin, Prontschistschef, and Schalauroff, we point out the active part taken by Russia during a portion of the 18th century, in exploring the north and north-eastern coasts of Siberia and the islands in its neighbourhood. The exertions of these different mariners embrace a period of forty years, from 1728 to 1770. It ought to be observed, that of all the endeavours made by those we have just mentioned to double Cape Tchoukotskoi, not one of them succeeded: in fact, it had not been done since 1648, during the voyage of the Cossack Deschneff. Nevertheless, these repeated efforts had this important result, that they rectified many serious errors concerning the line of the coast of Siberia; and a great many points intermediate between the Straits of Waygatz and Cape Schelatskoi were better determined by these perilous and difficult navigations.

Is it certain, then, that the inhabitants of western Europe could not reach Behring's Straits but by the Pacific, rounding Cape Horn? and is the passage so much sought by Corté de Réal, Hudson, and Baffin, undiscoverable? Were the discoveries of these last imaginary? Where did those of Hudson stop to the north and west? Was it with propriety that some geographers defaced from their maps the coasts of that sea of which

Baffin had detected the limits? What really are the western coasts of Greenland? are they prolonged indefinitely towards the pole, or, trending to the west, may they then be traced? Such were some of the principal questions which were canvassed by the maritime nations of Europe since the early years of the 18th century.

In endeavouring to resolve them, Knight, Barlow, and Vaughan, between 1719 and 1722, did actually nothing. Middleton, in 1741-2, advanced into north latitude 66° 14′ by 86° 28′ west longitude, but still was not more successful. However, he made us more familiar with the northern ports of Hudson's Bay, and especially with that deep creek between Cape Dobbs and Cape Hope. The examination of the same localities by Captains Moore and Smith, in 1746, is the only result of their voyage which might have become useful to science, if, directing their course more to the north, they had reached the icy Straits of Middleton, since recognised as the Repulse Bay of our charts. With these attempts, those of Hearne and Mackenzie must be united, whose travels, though undertaken by land, had truly a maritime object in view. These courageous travellers reached two points in latitude 69°, upon the hyperborean shores of America; but what immense intermediate spaces between the Icy Cape of Cook, Mackenzie's River, Hearne's, and the last determined points of Repulse Bay!

If we were writing a dry catalogue, other names would require to be introduced; but we must here pass over in silence those attempts which yielded no results: we must limit ourselves to the statement, that the voyages of Captain Phipps, and of the Davies, Lowenorn, Egède, and Rothé, have established the fact, that an impenetrable wall of ice flanks the eastern coasts of Greenland, and that a never-ending winter prohibits all approach to it.

It might have been thought that so many vain attempts would have banished the north-west passage into the number of hopeless speculations. But this was far from being the case in England, where it continued to have many partisans amongst geographers, as well as among practical mariners. The British Government yielded to the suggestions of these two classes, and fitted out the first expedition of Captains Ross and Parry; and the recognition of the shores of Baffin's Bay, such as that great mariner had described them, was the result. Ross penetrated into Lancaster Sound, but did not advance ten leagues ere he imagined he saw land to the west which debarred his further progress. He then turned; but his opinion found dissentients in the expedition, and did not afford satisfaction in England. Parry, accordingly, was again fitted out to ascertain whether Ross or public opinion were right. He entered this unexplored Sound of Lancaster, which he speedily found to be a strait running directly west. He entered into this prolongation of the former, calling it Barrow's Straits, and discovered Prince Regent's Inlet on the south, and traversed it as far as 72°, when he returned to the north, and sailed in a polar sea, where the islands of Cornwallis, Bathurst, Melville, and some others, successively presented themselves to view. The ice finally stopped him at 116° west longitude, and forced him to return. Thus, although the object was not yet attained, still the geography of these high latitudes underwent a complete change. The whole of the region to the north of Lancaster's Sound, and to the south as far as Labrador, was found to be intersected with innumerable channels and islands, and Greenland was proved to be detached from the continent of America.

Parry quitted England a third time in 1821. He reached Hudson's Bay, penetrated into the icy straits of Middleton, and into Repulse Bay. He for the first time entered Lyon's Inlet, a narrow arm of the sea which ran into the continent, and terminated in Ross's Bay. Winter arrested his progress for eight months in the harbour of Winter Island; after which he quitted it to proceed further north. He doubled the point of Melville's Peninsula, and went through the Strait of the Hecla and Fury, in the 70° degree north, and so reached the Polar Sea. He did not go farther west than the 85° in this voyage, the principal results of which were an accurate retracing of the former discoveries of Bylot, Baffin, Middleton, and Fox, the discovery of the north-east portion of Melville Peninsula, and of the Hecla and Fury Straits. The impossibility of clearing the strait, on account of the western currents, which bring along with them enormous masses of ice, proved, that if the north-west passage be not an absolute impossibility, yet it is wholly useless for all the practical purposes of navigation, whether attempted along the northern shores of America — by passing between Melville Peninsula and Cockburn's Island — or by attempting Regent's Inlet — or, finally, by any other existing courses to the west and south of Melville Island.

The fourth voyage of Parry had for its object to reach the north pole over the ice; but natural obstacles prevailed over the most ardent zeal for discovery, and he accomplished nothing.

Captain Franklin was dispatched to America in 1819, to second on land the efforts of Parry, and chose for the centre of his operations the points which were determined by Hearne. He then descended the Coppermine River, entered the Polar Sea, and proceeded eastward as far as George the Fourth's Coronation Gulf, at nearly the same latitude as Repulse Bay, and which seemed to extend to the south-east, as if to connect itself with Chesterfield's Inlet. His second expedition, in 1825, had a double object in view. On reaching Mackenzie River, half of his party, under the command of Richardson, were to examine the coast intermediate between this river and the Copper-mine; and the other half, under his own command, were to examine the coasts between Mackenzie's River and the Icy Cape of Captain Cook. Complete success attended the former branch of this expedition; and Franklin himself was just on the point of reaching the last place visited by Cook, when the peremptory character of his instructions compelled him to stop about 10° east of the Icy Cape.

While Franklin and Richardson were exploring the coasts of America by land, Captain Beechy, in the ship Blossom, was employed to co-operate with them by sea; and, in the summer of 1826, he explored the north-west coast from Kotzebue Sound to Elson's Bay, 126 miles north-east of Icy Cape, and only 146 from Franklin's westmost point. He likewise surveyed, in his progress to and from Behring's Straits, many of the islands and coasts of the Pacific Ocean.

Captain Ross, stimulated perhaps by Parry's success, and wishing to retrieve the credit he had lost by his unlucky mistake respecting the termination of Lancaster Sound, succeeded, by the aid of a private friend, in fitting out a small expedition for discovery, with which he left England in May 1829. He was no more heard of till the autumn of 1833, when his party made their escape from the ice that had detained them so long, and reached in safety the very ship, the Isabella, with which he had explored Baffin's Bay in 1818, now employed as a whaler, and which had been searching for him in Prince Regent's Inlet. The extent of his new discoveries was not great. Besides reaching the magnetic pole, he surveyed the eastern and part of the western coasts of a land to which he gave the name of Boothia-Felix, in honour of Mr. afterwards Sir Felix Booth, to whose assistance the expedition was chiefly owing.

Public feeling in Britain having been strongly excited to ascertain the fate of Ross and his crew, an expedition was fitted out by private subscription, and put under the charge of Captain Back, who left England in February 1833, with instructions to search for Ross in the first place, and afterwards to explore so much of the neighbouring seas and countries as his time and opportunities would permit. The results were, "the determination of the physical aspect of the country north-east of Great Slave Lake, and the contribution of some additional facts regarding its coast line."

While these expeditions were in progress in the northern parts of America, geographical science was rapidly advancing in other parts of the world. The officers of the British navy, let loose from the toils of war by the long-continued peace, have been more usefully employed in surveying the seas and coasts of almost every accessible country; and by the zeal and intrepidity of private adventurers, as well as of public officers, large accessions have been made to our knowledge of the interior regions of both Africa and Asia. We should now take notice, in due order, of the journeys of those travellers, who, during the last four centuries, have contributed so materially to the progress of our acquaintance with the various countries of the earth; but our limited space would allow us to give nothing more than a useless list of names; and, besides, many of these will necessarily be mentioned, and perhaps more appropriately, in our descriptions of the countries that have been illustrated by their labours. We shall therefore conclude our sketch with a brief account of the more distinguished of those dauntless spirits who ventured, and many of whom sacrificed their lives in a series of expeditions more dangerous still than the northern voyages, and, for a long time, with as little prospect of a successful result.

Africa, though lying so near Europe, and apparently so easily accessible from the shores of the Mediterranean sea and the ocean, has ever been the reproach of European geography. The Roman conquests included all the regions of Barbary between the sea and the desert, and even of the interior their travellers seem to have acquired some knowledge; for Ptolemy, the geographer, describes a number of great rivers, lakes, and mountains, westward from the Nile, which have been generally understood to have been in the modern Negroland. Afterwards, at an early period of the middle ages, the Arabs, hurried on by the spirit of enterprise as well as of fanaticism, penetrated across the desert, and explored, subjected, and colonized, a large tract of the central regions. Several descriptions of these kingdoms are extant in the Arabic

language, but which, being till lately unknown in Europe, contributed nothing, directly at least, to the progress of geography. Early, however, in the 16th century, Hasan-Ibn-Mohammed-al-Gharnati, better known by his Christian name of John Leo Africanus, a converted Mahometan, at the request or command of his patron, Pope Leo X., wrote, in Arabic, a description of Africa, which was immediately translated into Italian, and published by Ramusio in his great collection; and having been soon translated from the Italian into French and other European languages, spread the knowledge of these countries among the learned of Europe. In the same century, the Portuguese, after having explored the coasts of Africa, penetrated into Abyssinia, and for some time maintained a communication with that country; but for two centuries later, no further progress was made by Europeans in exploring the interior.

In 1769, JAMES BRUCE, of Kinnaird, a Scottish gentleman of high lineage, and corresponding stature, after having been British consul at Algiers, and travelled through Barbary and Syria, conceived the design of penetrating into Abyssinia, and visiting the sources of the Nile. Accordingly, in November of that year, he entered the country, and in the November following (1770) he reached the springs of the Bahar-el-Azreek, or eastern Nile, to the south-west of Gondar, but had the mortification to learn, on his return to Europe, that he had been anticipated in his discovery by Payz, a Portuguese missionary, who had visited the same place in 1618. His account of his travels was, moreover, attacked on all hands by envious cavillers, and, upon their authority, discredited by people who could not judge for themselves. His reputation, like that of his great brother travellers, Marco Polo and the Father of History, who was considered for many ages to be little better than the Father of Lies, suffered severely; but every day, of late years, has been bringing to light new proofs of his veracity; and his claim to be considered as one of the most distinguished of modern travellers will now hardly be disputed.

In 1793, Mr. W. G. Browne, an English gentleman, an enthusiastic traveller, penetrated into Dar-Fur, a country to the west of Abyssinia, and procured the first distinct accounts of the origin and early course of the great western branch of the Nile, the Bahr-el-Abiad. Though he returned in safety from this daring enterprise, he afterwards perished in his vocation, having been murdered while on a journey in Persia in 1813.

In 1788, an association was formed in London to *promote the discovery of the inland parts of Africa*. Their first missionary was John Ledyard, an American, who had been round the world with Cook as a private marine, and had afterwards travelled on foot to the extremity of Siberia. The love of travelling seems to have been with him a disease: when Sir Joseph Banks first communicated the views of the association, he engaged in their service at once, and offered to start "to-morrow morning." He proceeded forthwith to Cairo, where he remained some time to qualify himself for his perilous enterprise. By conversing familiarly with the caravan merchants, he gained and transmitted to his employers a great deal of new information concerning the interior, but was carried off by a bilious fever before he could begin his journey. Their next missionary was Lucas, in 1789, who failed in an attempt to cross the desert from Tripoli, but acquired considerable information respecting the countries he had intended to visit. In 1791, Major Houghton, also employed by the association, attempted to explore Africa from the Gambia, but perished, or was murdered near Jarra, on the borders of Ludamar and Kaarta. In 1794, Foota-Jallo, near the west coast, was explored by Messrs. Watt and Winterbottom, two gentlemen in the service of the Sierra-Leone Company.

The next, and the most distinguished, missionary of the association, was MUNGO PARK, a native of Selkirkshire, in Scotland, and a surgeon by profession. In December 1795, he left the British settlement on the Gambia; and on the 21st of the following July reached the banks of the Niger — the grand object of his journey — "glittering in the morning sun, as broad as the Thames at Westminster, and flowing slowly to the eastward." He afterwards proceeded down the river to Silla, a large town on its south bank, 18° east of Cape Verd, on the same parallel; but there finding himself exhausted with sickness, hunger, and fatigue, half naked, and without any article of value to procure provisions, clothes, or lodging, and the fanaticism of the Moors, and the tropical rains, presenting insuperable obstacles to his farther progress, he determined to return to the coast; and accordingly reached the Gambia, after an absence of eighteen months — a successful result, to which the benevolent attention of a slave-dealer, named Karfa Taura, was mainly instrumental.

In September 1799, Frederick Horneman, a German, who had been educated at Gottingen, and offered his services to the association, left Cairo, under their patron-

age, penetrated through the desert by Siwah and Fezzan, and procured much information concerning the interior countries, which he carried to Tripoli. He returned to Fezzan in January 1800; and on 6th April of the same year, he wrote home that he was upon the point of setting out with the caravan to Bornou. No intelligence of his subsequent proceedings was ever received from himself, but Captain Clapperton learned, many years afterwards, that he had died at Nyffe.

In 1804, Park was again employed, and received the charge of a large party of artificers and soldiers, accompanied with every requisite for the journey, the object of which was to explore the Niger to its termination, wherever that might be; though Park himself was firmly persuaded that it was nowhere but in the ocean, and probably at the Zaire, or river of Congo. He left the Gambia in the summer of 1805, and reached the Niger, after a difficult and disastrous journey of five hundred miles. Being assured of protection by Mansong, the king of Bambarra, and having received his permission to build a boat at any part of his dominions, Park chose Sansanding for the purpose; and having succeeded in building a large schooner, which he named the Joliba, he set out on his adventurous voyage on 17th November 1805. No farther intelligence was ever received from himself; but it has been since ascertained that he perished, through the hostility of the natives, at a difficult passage of the Niger, near Boussa.

In 1811, Timbuctoo was visited by Adams, an American sailor, who had been shipwrecked on the coast, and made a slave by the Moors; and in 1815, Riley, an American shipmaster, having also been wrecked, met with a merchant, named Sidi Hashem, from whom he learned many particulars concerning the course of the mysterious Niger. All eyes were now turned to the Zaire as the most probable outlet of the great river; and in 1816, an expedition was fitted out, under the charge of Captain Tuckey, for the purpose of exploring its upward course. But the commander himself, and many of his party, having died of fever, the expedition was abandoned by the survivors. In 1818, it was resolved by the British government to appoint a Vice-consul to reside at Mourzook, the capital of Fezzan; and Mr. Joseph Ritchie was selected for the undertaking. He was joined at Tripoli by Captain G. F. Lyon, R. N.; and on the 25th March 1819 they left Tripoli for the interior. They reached Mourzouk on the 4th of May. Mr. Ritchie died there, after a long illness, on the 20th of November following; and Captain Lyon and his surviving companion, Belford, a shipwright, returned to Tripoli, where they arrived on the 25th March 1820.

The mission of Ritchie and Lyon was followed up by the appointment of Dr. Walter Oudney, Captain Dixon Denham, and Lieutenant Hugh Clapperton, R. N., to proceed to the interior of Africa by the way of Tripoli and Fezzan. These travellers, accompanied by William Hillman, a shipwright from Malta, and escorted by Boo-Khaloom, a merchant of Fezzan, and a party of Arabs in the service of the Bashaw of Tripoli, left Mourzouk 8th June 1822, and on the 4th of the following February they had the inexpressible pleasure of beholding from a rising ground "the great lake *Tchad*, glowing with the golden rays of the sun in his strength." Denham remained in Bornou, making exploratory journeys in various directions, while Oudney and Clapperton proceeded westward: Oudney died at a place called Murmur, 12th January 1824; but Clapperton reached Sokatoo, the capital of Sultan Bello, chief of the Fellatahs. During his absence, Denham was joined by Ensign Toole, of the 80th regiment, who had volunteered his services at Malta, but who died very soon after his arrival in Bornou; also by Mr. Tyrwhitt, who brought with him presents from the British government to the Sheikh of Bornou. The surviving members of this adventurous party returned to Tripoli from their interesting and successful journey, in January 1825. The termination of the Niger being still uncertain, Captain Clapperton was again appointed to proceed into the interior of Africa by the way of Guinea, which he accomplished successfully. He reached Sokatoo, but died there on the 13th day of April 1827, and his papers were brought home by his servant, Richard Lander, for whom was reserved the honour of solving the problem that had puzzled European geographers so many years in vain. Lander was immediately employed to proceed on a new expedition; and accordingly, accompanied by his brother John, he left the coast of Guinea for the interior, 31st March 1830, and on the 17th June reached the Niger at Boussa. They traced the course of the river downwards to the ocean, which it enters in the Bight of Benin. In a subsequent expedition, Lander perished in a skirmish with the natives.

While these expeditions were in progress, Captain, afterwards Major, Alexander Gordon Laing, of the African Colonial Corps, who had been sent home with dispatches after the unfortunate Ashantee war, was engaged by government to proceed on a

journey through the desert from Tripoli to Timbuctoo. After spending some time at Tripoli, he proceeded on his journey in 1826, and reached Timbuctoo; but having left that city, with the view of proceeding towards the west coast, he was murdered in his tent, at a halting place in the desert, and his papers carried off. A more fortunate result attended the efforts of René Caillie, a young Frenchman, who, having cherished from his earliest infancy a strong desire to become a traveller, proceeded to Senegal in 1816; and, after spending several years in travelling through the countries in the neighbourhood, finally left the vicinity of the Rio Nunez in April 1827, and, travelling along the Joliba, or Niger, by Jenné and the lake Dibbie, reached Timbuctoo on the 20th April 1828. He remained fourteen days in that city, then proceeded northwards through the Sahara, and reached the French consulate at Tangier in September following — the most fortunate of all the explorers of central Africa. All his predecessors are dead. Major Denham, after returning from Bornou, died at Sierra Leone; and another victim has lately been added to the list, in the person of Mr. John Davidson, a member of the Royal Geographical Society of London, who left Wedinoon in Morocco, towards the end of 1836, and was murdered in the desert, thirty-two or thirty-three days after, on his way to Timbuctoo.

At a time when the despotism of Buonaparte had closed every avenue of distinction but one to the youth of the Continent, John Lewis Burkhardt, a native of Zurich, and a cadet of one of the principal families in Switzerland, came to England, and offered his services to the African Association. Under their patronage he left England in 1809, and spent several years in Syria, Egypt, and Arabia, to perfect himself in the knowledge of the religion, the manners, and the language of the Mahometan Arabs, as preparatory to his journey into the interior of Africa. He took the name of Sheikh Ibrahim, and was very successful in maintaining his assumed character of a Mussulman. He transmitted to the association very valuable journals of his excursions in Syria, Egypt, Arabia, and Nubia; but, like his predecessor Ledyard, before he could accomplish his principal object, he was carried off by dysentery in October 1817. While these expeditions were in progress in Northern Africa, various exploratory journeys have been made by missionaries and others into the interior parts of South Africa from the settlements at the Cape of Good Hope, making us acquainted with the numerous tribes that possess those regions. Messrs. Cowan and Denovan perished, in 1808, in an attempt to penetrate from the Cape to the north-east coast; but a similar expedition, conducted by Dr. Andrew Smith, has lately proved more successful, adding considerably to our previous knowledge of the country and people, and contributing largely to the progress of natural history at least, if not of geography. This expedition started from Graaf Reynet in August 1834, and returned in the beginning of 1836, having penetrated several hundred miles beyond Latakoo, as far as latitude 25½° south, and 28° 50′ east.

The additions made to our knowledge of the interior parts of Africa by the journeys of the daring travellers whom we have endeavoured to commemorate, bears no proportion to their efforts, or to the expense that has been lavished upon this object; for Africa still presents one long extended blank of unknown regions. The interior of the wide continent of Asia is hardly better known; for no modern European has visited the countries that form the great empire of China, reaching from the Himalaya mountains, on the borders of India, to the range of the Altai, on the borders of Siberia. The interior of New Holland likewise presents another blank; and the wide range of the Antarctic ocean is yet to be explored. But the spirit of discovery, like the schoolmaster, has gone abroad; a spirit of innovation and change seems to be pervading all the earth. The very Hindoos, long crushed under the weight of a dark superstition, that seemed an insuperable bar to improvement, are now beginning to awake from their lethargy, and to desire to learn the language, the manners, and the customs of their European conquerors. The Chinese, too, the people of the celestial empire, the inhabitants of the central kingdom of the universe, who used to look with contempt on all the rest of mankind as barbarians, are beginning to feel the superiority of their visitors; and a general spirit of inquiry seems ready to awaken their minds from the long sleep of ignorance and prejudice in which they have been sunk. They have already learned that the barbarians have fire-ships, with which they can ascend rivers without the aid of trackers; and, perhaps, the day is not far distant when they shall see these fire-ships, and these barbarians, carrying the seeds of civilization and the blessings of knowledge and true religion, into the heart of their empire, along their far-famed, but hitherto little-known rivers, the Yang-tse-kiang, and the Whang-ho.

Since the last part of the preceding sketch was written (1837), our anticipations have been in some degree realized by the progress of the British expedition against China, in the course of which the steam-vessels of the Indian navy, as well as several ships of war, ascended the Yang-tse-kiang as far as Nan-king. One of the conditions of the treaty of peace, with which the war has been concluded, is, that five of the principal maritime cities of China, besides the Island of Hong-kong, shall be opened to European trade; and from these, as from so many central points, it may be expected that the science and the civilization of Europe will find their way into the interior of the country. The river Indus, also, has been surveyed, and opened to steam navigation; and, by the ascent of two steam-vessels, built for the purpose, and sent out by the East India Company in 1841, the practicability of navigating the Euphrates has been ascertained. These vessels reached Balis, the port of Aleppo, 1130 miles from the sea, without any casualty, in 273 hours, or 19½ days. The chief difficulty to be encountered is the strength of the current, caused by numerous walls or dams constructed in the river, at different places, to raise water for irrigation; but these might be partially or even wholly removed. Another great river of Asia, the Oxus, has been traced by Lieutenant Wood, R. N., the surveyor of the Indus, to its source in the Sir-i-kol, on the lofty table-land of Pamer; but, owing to the circumstance of this river terminating in an inland sea, or great lake, it cannot be laid open to general navigation like the other celebrated streams which we have mentioned.

A less fortunate result has attended an expedition which left Britain in 1841, for the purpose of opening the navigation of the river Niger or Kawara, in Central Africa, exploring the upper part of its course, and forming agricultural and commercial establishments on its banks. The steam-vessels employed had ascended no farther than the confluence of the Kawara and the Tchadda, when their crews were attacked with fever; and the commanders felt themselves, in consequence, obliged to return to the coast. The further prosecution of the objects of the expedition has been abandoned; and the geography of that part of Africa must still remain uncertain or unknown. On the opposite side of the continent, however, discovery has been steadily advancing. Several travellers have explored Nubia and Abyssinia, and penetrated to Dar-Fur and Shoa; and, in particular, Messrs. D'Arnaud and Sabatier, in 1841-2, ascended the Bahr-el-Abiad, for 500 leagues above Khartum, to 4° 42′ N. lat., nearly under the meridian of Cairo, beyond the place usually assigned to the mountains of the Moon, but without perceiving any mountains in sight.

In America, the outline of the northern coast has been nearly completed by the persevering exertions of Messrs. Dease and Simpson, officers of the Hudson's Bay Company, who, in 1837, connected Franklin's westmost point with the most easterly point of Beachey, and in 1839 traced the coast eastward, from the points reached by Franklin and Back, without, however, being able to connect them with the discoveries of Parry and Ross. In South America, Mr. R. H. Schomburgk has made several important discoveries in the interior of Guiana, tracing the watershed which divides the rivers of that country and of the basin of the Oronoco from those of the basin of the Amazons; and cutting off a large portion of the supposed upper course of the Oronoco, and transferring it to the Rio Branco, a branch of the Amazons. We may also refer, though they are more important in an antiquarian than in a geographical point of view, to the discoveries that have been, and are continually being made, of ruined cities and temples in Central America, which seem to imply a far higher degree of civilization than has usually been ascribed to the former inhabitants of that country.

In the Antarctic Regions also, discovery has been advancing; but the most important results of recent expeditions have been detailed in the 1018th page of our work.

J. L.

March, 1843.

CHAPTER II.

PRINCIPLES OF MATHEMATICAL GEOGRAPHY.

§ 1. — *Of the Earth, considered with relation to the other Celestial Bodies.*

Astronomy exhibits to our view the globe of the *Earth*, balanced by its own weight, and revolving in the immensity of space with ten other planets round the resplendent luminary that distributes to each of them its portion of light and heat. Of these, the earth is, as may be seen from the table placed at the end of this chapter, the third in the order of distance from the sun, and the fourth in point of size. Its form is that of a globe, or sphere, and this spherical form is the basis of mathematical geography. That the earth is globular, will appear obvious from a few considerations. Were we placed on a wide plain, or on the surface of the ocean, no mountain would then intercept the objects situated within the range of our vision. Why then do not elevated objects only diminish in apparent size, as they recede from our view, without any portion of them being hid, as would certainly be the case if we were upon the same horizontal plane with them? Why do towers and mountains, when we recede from them, appear to sink below the horizon, the base disappearing first? and why, on the contrary, when we approach these objects from a distance, do their summits first come into view, then their middle parts, and last of all, their bases? These phenomena, which every one has an opportunity of observing, prove evidently that every apparent plane upon the earth is in reality a curved surface. It is the convexity of this surface which conceals from the spectator on the beach, the hull of the vessel of which he sees the masts and sails. But since we know that these things happen uniformly, towards whatever part of the earth we travel — since we find that this assemblage of curved surfaces is nowhere sensibly interrupted, it is impossible to avoid the conclusion, that the whole surface of the earth is curved on all sides in a nearly regular manner; or, in other words, that the earth is a body approaching in figure to a sphere.

The object at which the first observers of the stars chiefly aimed, was, doubtless, to discover fixed marks by which they should be enabled to recover their position, or direct themselves in their voyages. They remarked that the sun occupied, in the celestial hemisphere, a place opposite to certain stars, which every night were constantly visible over their heads, while other stars disappeared and re-appeared alternately. But their attention was particularly attracted by the *pole-star:* they remarked that this point in the heavens, itself immovable, appears to serve as a pivot, or *pole*, to the apparent motions of the celestial bodies. They next traced a *meridional line*, that is, a straight line on the ground, in the direction from the sun at noon to the pole-star; and however imperfect this first operation may have been, it was sufficient to mark out to them the four quarters of the world, usually denominated the *cardinal points*. Now, if they proceeded towards the north, they saw the pole-star take a higher place in the heavens, with regard to the *horizon*. If they went towards the south, the same star appeared to sink, and other stars, before invisible, appeared successively to rise. It was therefore impossible that the line whose direction they followed could be a straight line traced upon a horizontal plane; it could only be a curve — in short, an arc of a circle, corresponding to another arc of an imaginary circle in the heavens. But as the same changes of the horizon had everywhere taken place, it was natural to conclude that the earth had at least a circular form from north to south.

Astronomical observations were rendered perfect by repetition. The motions of the heavenly bodies were calculated from fixed epochs; and the periodical return of eclipses was determined. It was then easily perceived, that the sun rises sooner to those who dwell more towards the east, and later to others in proportion as they are removed to the west. This, however, could not happen, unless the surface of the earth were curved from east to west; for were it flat, the sun would begin to illuminate all parts of the same side at the same instant of time.

Lastly, when by a series of observations we are fully convinced that the eclipses of the moon are caused by the conical shadow of the globe of the earth, we have a complete confirmation of all the preceding proofs in favour of the rotundity of the earth; and we see, at the same time, that the globe of the earth is not subject to any great irregularity; since, in all possible positions, its shadow upon the disk of the moon is

* To economize space, *marginal references* have been dispensed with; but a substitute for these will be found in the *analytical table of contents* prefixed to the work.

found to be terminated by an arc of a circle. The numerous voyages which have been made round the world, have at length silenced all those who persisted in regarding the earth as a circular plane, or a hemispherical disk. Navigators, like Magellan and Drake, sailing from Europe, have pursued a course always towards the west; and without quitting this general direction, have returned to the place whence they set out. Upon a circular plane we might indeed perform a circular voyage, but only by continually changing the direction. Heemskerk, having wintered at Nova Zembla, confirmed what astronomers had concluded from the spherical figure of the earth: namely, that the days and nights near the poles extend to several months. Finally, Cook and others, in approaching as near as possible to the southern polar circle, found that the distance round was always diminished in proportion to the diminution of his distance from the pole; so that we have thus obtained an experimental proof of the roundness of the earth towards the south pole, as well as towards the north.

So many concurring proofs leave no room for reasonable doubts respecting the sphericity of the earth. Respect for the Sacred Writings, which, in speaking of the earth, employ expressions borrowed from ordinary language, ought not to induce us to reject a physical truth altogether foreign to the moral truths which religion undertakes to teach. In vain does ignorance demand how the earth can remain suspended in the air without any support. Let us look upon the heavens, and observe how many other globes roll in space. The force which supports them is unknown to us; but we see its effects, and we can investigate the laws according to which these effects take place. Everything on the surface of the earth is impelled in straight lines towards its centre; the antipodes see, in like manner as we do, the earth under their feet, and the sky over their heads. What should we gain by supposing, with Homer, the earth to be supported by a range of columns guarded by Atlas? or by imagining it to rest upon nine pillars, like the Scandinavians? or upon four elephants, according to the opinion of the worshippers of Bramah? Upon what would these elephants or these columns rest? Our thoughts, however far they proceed, must always at length stop short, and, affrighted, recoil from that infinity which surrounds us on every side, and which it is folly to attempt to comprehend.

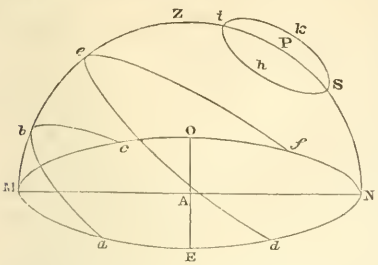
But some more rational observers will say, Do not the Andes and the Alps make it evident that the earth is an irregular body, and not at all round? We answer: The highest mountain known, which is Dhwalagiri in Nepaul, rises to about 28,077 English feet above the surface of the sea. This height is nearly 1-5000th of the earth's greatest circumference, and 1-1600th of its axis. Upon an artificial globe of twenty-one feet in circumference, or of 6¾ feet in diameter, Dhwalagiri could only be represented by a grain of sand less than one-twentieth of an inch in thickness. Irregularities so imperceptible do not deserve to be taken into consideration. We shall see, besides, as we proceed, that the true differences which exist between our globe and a perfect sphere, are known, measured, and estimated. But before entering on this subject, it is necessary to point out more precisely the nature of some of the relations which connect this earth with the other heavenly bodies.

On directing our view to the heavens, the stars appear to move from east to west, each describing a portion of a circle. If we observe this motion more attentively, it appears to be performed about an immovable point, which has received the name of *pole*, and the star which is situated nearest to it is called the *pole-star*. The sky presents itself under the appearance of a sphere; there must therefore be, in the hemisphere which is invisible to us, another immovable point: this point is the *south celestial pole*, as that which we see is the *north celestial pole*. The imaginary line which passes through these two points is named the *axis* of the world. This line passing through our globe forms at the same time its axis, and intersects the surface of the earth in two points corresponding to the poles of the heavens, and denominated *terrestrial poles*. That which answers to the pole-star, is called the *north*, or *arctic pole;* the opposite pole is named the *south*, or *antarctic pole*.

The point of the horizon which corresponds to the north pole is called the north, and the opposite point is the south. The circle perpendicular to the horizon, which passes through the poles, is called the *meridian;* it divides the visible celestial hemisphere into two equal parts; so that the stars, at the moment when they appear upon this circle, are at the middle of their apparent course. It is the passage of the sun over this circle that determines the instant of apparent noon.

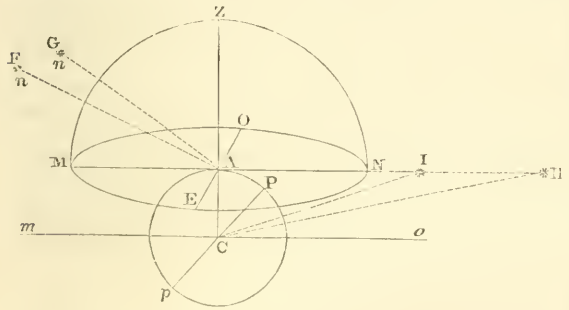
We have already spoken of the *meridian line*, or of the line which joins the north point of the horizon with the south. A line perpendicular to the meridian line, and conceived to be extended both ways till it meets the horizon, marks upon this circle two opposite points, each 90 degrees distant from the north and south; and to which are appropriated the names of *east* and *west*.

We may illustrate these definitions upon an artificial globe, or by means of the annexed figure.



Let the circle N E M O represent the horizon, and the point A the centre, at which the observer is placed; the letters *a b c* and *d e f*, will indicate portions of circles which the stars appear to describe about the pole. Those stars whose polar distance is not greater than the arc P N, which measures the elevation of the north pole above the horizon, appear to describe complete circles, as S *h i k*. The point N marks the north point of the horizon, M the south; and consequently M N represents the meridional line. The celestial meridian is represented by the semicircle M Z N, of which the plane is supposed perpendicular to that of the horizon N E M O, and which passes through the points M and N. This circle divides the arcs *a b c* and *d e f* into two equal parts at the points *b* and *e*. The east point of the horizon is represented by the point E, and the west by the point O. It is from E towards O that the stars appear to move, passing in the middle of their course through some point of the celestial meridian M Z N.

The true cause of these appearances is the motion of the earth round its own axis from west to east in the space of twenty-four hours. We proceed now to explain this motion by means of another figure, which represents the globe of the earth. We shall suppose the point A to be the place of the observer, E M O N his horizon, and the straight line P*p* to represent the axis round which the earth performs its motion of rotation. It is easy to perceive, that the horizon of the observer, since it turns along with him during the rotation of the earth, must advance towards the stars successively, so as to give them the appearance of gradually approaching the horizon, in the same manner as a vessel leaving or approaching the land causes the objects on shore to appear to the eyes of an observer on board to be in motion.

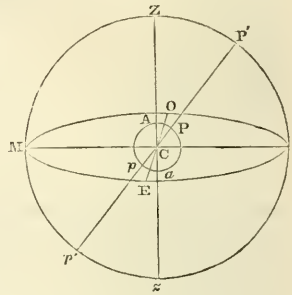


As the plain M Z N of the meridian revolves at the same time with the horizontal plane N E M O, to which it is perpendicular, it must point successively to the different stars, which will then appear in the middle of that part of their course which they describe above the horizon. As soon as any star touches the western verge of the horizon, that star appears to set, and ceases to be visible until the motion of the earth has brought back upon it the eastern boundary of the same circle.

This explanation gives a direct reason for the diurnal appearing and disappearing of the stars and of the sun. But in order to conceive the use which is made of these celestial appearances in astronomy and geography, it must be observed that the celestial motions are measured only by *angles*, without any regard to absolute lengths and real distances. For example, if the star *n* appear first above the horizon in the direction of the visual ray A F, and be seen afterwards in the direction of the ray A G, the eye of the spectator measures only the angular space F A G; it determines only the arc of the circle comprehended in this angle, and not the length of the radius. This arc is estimated in degrees, and parts of a degree. The circumference of every circle, whether a great circle or a small, is supposed to be divided into 360 degrees. Each degree is divided into 60 minutes, and each minute is subdivided into 60 seconds.

It is easy to see, that with regard to the heavenly bodies we may substitute for the plane N E M O, which touches the earth, a parallel plane, passing through the centre. The reason is, that when a star situated at I appears in the horizontal plane which touches the earth at the point A, an observer, placed at the centre of the earth, would

see the same star upon the line C I, so that it would appear elevated only by the angle I C *o*, which will be so much the smaller, according as the star is more distant. The figure renders this evident with regard to the star situated at the point H. The distance of the stars being almost infinite, compared with the semi-diameter of the earth, which separates the place of the observer from the centre of the globe, this angle becomes insensible for the fixed stars, and very small for the planets.



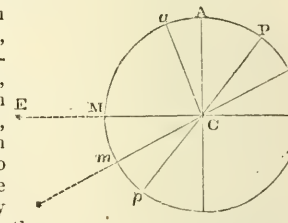
We may substitute therefore, without error, another diagram, instead of the preceding, assuming for the horizontal plane, with regard to the stars, the plane N E M O passing through the centre of the earth, and parallel to the plane touching it in A. We may conceive, in the same manner, the plane of the celestial meridian M Z N, to be extended indefinitely from the centre C of the earth, through which it must necessarily pass, since it passes through the axis P *p*. This plane determines upon the surface of the earth a circle P A *p*, which passes through the poles. This circle is the terrestrial meridian of the place A, and at the same time, of all the places situated upon its circumference.

We ought to observe here, that the horizon represented by the circle N E M O, and which passes through the centre of the earth, is called the *rational horizon*, to distinguish it from the circle whose plane is a tangent to the surface at the point on which the spectator is placed, and which is called the *sensible horizon*.

The line drawn from the centre of the globe through the place of an observer, determines the position of a point Z in the heavens perpendicularly over his head, and called the *zenith*. The same line produced through the globe, marks, in the opposite part of the heavens, another point *z*, which is called the *nadir*.

The position of the line Z A C, which is called the *vertical line*, is ascertained by the direction which heavy bodies take in falling, as that of the horizontal plane is indicated by the surface which water at rest, and of inconsiderable extent, naturally presents. The vertical line, or that which is ascertained by a thread stretched by a plummet, is perpendicular to the horizontal plane. As gravity tends everywhere towards the interior of the globe, it acts at *a* in the direction *z a* opposite to Z A; in both places, bodies fall towards the surface of the earth. The people placed at *a*, having their feet opposite to the feet of those who are at A, are called the *antipodes* of these last. The *zenith* of the one is the *nadir* of the other.

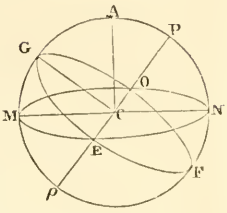
It follows from this definition, that the horizon must change its position relatively to the stars, when the observer changes his place upon the surface of the earth. If he removes, for example, from A to *a*, directly along the same meridian from north to south, the horizontal visual ray N M, will become *n m*, so that a star E, situated upon the prolongation of the former ray, will appear to be elevated above the horizon *m n*, by the angle E C *m*, which is precisely equal to that formed by the radii C A, C *a*, drawn to the centre of the earth.



It was upon this principle that Posidonius, having observed that the star *Canopus* appeared *in the horizon* at Rhodes, while at Alexandria in Egypt it appeared elevated by the 48th part of the circle, or 7 degrees and a half, concluded that Rhodes was distant from Alexandria, in the direction of the meridian, the 48th part of that circle. It is true, indeed, that the estimate of the Greek philosopher was inaccurate. Still, however, his principle is correct, and it is the same that is employed at the present time; the question being always to find, by means of observations made upon the same star, what ratio the arc A *a* of the meridian passing through the two points of observation, bears to the whole circumference of the circle. When this ratio has been determined, and the itinerary distance between the two points also measured, we are enabled to compute the whole distance round the terrestrial meridian.

By the observation above described we ascertain the relative position of two places, *a* and A, in respect of north and south; but in order to determine the absolute positions of these places, some fixed term of comparison is required. For this purpose we conceive a plane to pass through the centre of the earth at right angles to the axis

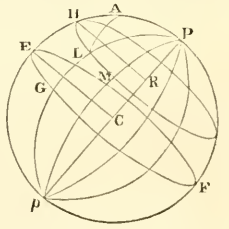
of rotation, determining upon its spherical surface a circumference G E F, every point in which is at the same distance from the poles P and *p*. This circle is called the *equator*. Now, if an observer be situated upon the equator, the two poles will appear exactly in the horizon; but as he removes from the equator towards either pole, that pole to which he approaches will rise above, while the other sinks below the horizon.



The height, or elevation of the pole above the horizon of any place, is equal to the angular distance of that place from the equator, estimated in the direction of the meridian. For the angles A C N and G C P being right angles, if we take away the common angle A C P, there remains the angle A C G equal to N C P. It is evident also, that the height M C G, to which the equator rises above the horizon, is equal to the complement of the angle A C G. It is sufficient, therefore, to determine the altitude of the pole above the horizon of any place, in order to find the angular distance of that place from the equator.

In the regions of the globe where one of the poles appears elevated above the horizon, those stars which never set, called circumpolar stars, furnish directly the means of determining the height of the pole. As they appear to describe circles about the celestial pole, each must appear equally removed from it at every point of its course; and as they twice pass the meridian during a diurnal revolution of the earth, namely, once above the pole, and once below it, we have only to measure their angle of elevation in each of these positions, and to take the arithmetical mean between the results, in order to obtain the elevation of the pole.

It is not enough to know merely the distance of a place upon the earth from the equator; because this distance is common to all the places which are situated upon a circle traced upon the surface of the globe by a plane parallel to the plane of the equator, and passing through the place in question. In order to distinguish places equally distant from the equator, it is necessary to know their meridians, the meridian being different for each place. The observation of the celestial motions may here be again successfully employed in the manner which we are now about to point out. We have seen that the planes of the different meridians, P A *p*, P L *p*, P M *p*, &c. intersect each other in the axis P C *p*; but since all these meridians turn upon this line, they must also correspond successively to the same star; and the time which elapses between the passage of two meridians, containing between them any angle, will thus be to the time of the entire rotation, as the angle contained by these meridians is to the whole circumference of the circle. Hence, if we could measure the first of these intervals, in order to compare it with the second, we should be able to deduce the angle which the two proposed meridians form with each other. To obtain this comparison, it is necessary that we should be able to indicate, by a signal visible at the same instant of time at places under both meridians, the moment at which a star appears upon one of them: this instant must be noted, and a well-regulated clock will measure the time which elapses till the same star appears on the other meridian.



When we have determined by this method the angle which the meridian P L *p*, passing through the place L, makes with the meridian P A *p*, passing through a given place A, the place L becomes entirely determined, provided that we already know its distance G L from the equator E G F; for it will necessarily be situated at the intersection of the semicircle P L *p*, and the parallel L M, drawn at this given distance.

The shortest distance of a place from the equator is termed its *latitude*. This distance is measured by an arc of the meridian comprehended between the place and the equator. Latitude is north for those places which lie between the north pole and the equator, and it is south for places in the opposite hemisphere.

The angle contained by two meridians, measured by an arc of the equator, or of a circle parallel to it, is termed the *difference of longitude* of the places situated under these two meridians. That we may estimate these differences in an absolute manner, it is necessary to assume a *first meridian*, the choice of which is altogether arbitrary, and has varied at different times. The absolute longitude of a place is therefore the angle which the meridian of that place forms with the first, or conventional meridian.

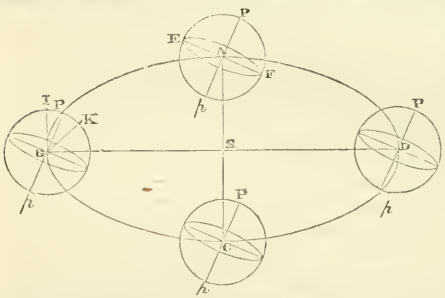
We have just seen that the determination of the difference of longitude of two

places upon the earth requires the use of a signal visible at the same time at both places. It is evident, that for places separated by any considerable distance, the only signals sufficiently elevated must be sought for among the stars. It is indeed by means of the celestial bodies that the geographer determines the position of places. We must therefore acquire some idea of their motions, particularly of the motions of the sun and moon.

Every attentive observer of the heavens must have remarked that the sun, besides the apparent diurnal motion which it has in common with all the stars, appears, in the course of a year, to change its place in a two-fold manner. First, it appears to advance towards one of the poles, and then to fall back and approach towards the other, or to oscillate in the direction of north and south. Again, if we observe its place among the stars, it appears either that the sun recedes daily towards the east, or that the stars advance in the opposite direction; for the stars which we see at any time set immediately after the sun, are, on the following evening, lost among its rays. Some days afterwards they re-appear in the east, and their rising precedes daily more and more that of the sun. At last, after a year, or about 365 days, the sun and stars are again observed in the same relative position.

The complexity of these motions is also increased by the apparent motions of the other planets, which sometimes seem to be hurried along by an impetuous vortex, at other times to become stationary, and sometimes even to acquire a retrograde motion. The impossibility of reconciling this apparent confusion of the heavens with the most simple principles of physical science, involved Ptolemy, Tycho-Brahé, and all others who, like them, maintained the doctrine of the immobility of our earth, in a labyrinth of contradictory hypotheses. Copernicus reduced this chaos into order and regularity, by supposing, with some ancient philosophers, that while the earth turns upon its own axis from west to east in the interval of a day, it has at the same time a motion in absolute space from west to east, and performs, in a plane inclined to the equator, an entire revolution round the sun in the space of a year.

The axis of the earth, with regard to the plane of the ecliptic, that is to say, the plane of the circle which the centre of the earth describes in its annual motion round the sun, remaining always parallel to itself, presents alternately each of its poles towards the sun. This phenomenon may easily be illustrated by the help of the annexed diagram, in which the lines P p, which are parallel to each other, represent the axis of the earth, S the centre of the sun, and A B C D the elliptic curve which the earth describes about the sun. In consequence of the parallelism of the axis, the pole P, which is the one nearer to the sun when the earth is at B, becomes the more remote when the earth is at D; because in the former position the inclination of the part B P of the earth's axis is directed towards the interior of the curve A B C D; but in the latter it is directed towards the exterior. At the two intermediate points, A and C, the axis P p is inclined neither towards the sun nor from it; but in every other point of the orbit A B C D, it necessarily takes an inclined position relatively to the sun. These different positions, being the cause of the difference of the seasons, deserve, however, to be explained more in detail.



It is easy to see that the surface of the earth is at every instant divided into two parts, the one illuminated by the sun, and the other deprived of his light. The common boundary of these two parts is determined by a great circle, the plane of which is perpendicular to the line drawn from the centre of the sun to that of the earth. To this line we suppose the sun's rays to be parallel; seeing that by reason of the great distance of the sun, and the small diameter of the earth, all convergency or divergency becomes insensible. It is evident, therefore, that the above circle, which is denominated the *circle of illumination*, is the boundary of the hemisphere which the earth presents to the sun. Hence the equator being a great circle, and consequently divided into two equal parts by the circle of illumination, each point of the equator must necessarily be illuminated by the sun during half the time that the earth requires to perform its diurnal revolution. It is evident besides, that all the circles parallel to the equator are unequally divided by the circle of illumination, and that this inequa-

lity becomes more sensible according as they are farther removed from the equator. In the case in which the greater of the two portions lies upon the illuminated side of the earth, the length of the day must exceed the length of the night. With regard to the whole region comprehended within the circle I K, described by the point I, there can be no night, since that circle lies entirely upon the illuminated side of the globe.

The other hemisphere must necessarily present an appearance in every respect the reverse of that which we have now described. The length of the days must there diminish as we approach the pole; and the polar region, lying entirely on the dark side of the earth, is buried in perpetual night.

It is also evident, that while the earth revolves upon its axis, all the points of the circle traced out on the surface by the straight line S B, which joins the centres of the earth and sun, come successively to receive the perpendicular rays of the sun; but if we remove from that circle towards either pole, we enjoy only the oblique rays.

Let us now consider the length of the days and nights at the time when the earth is situated at the point A or C. In this position the solar ray S A or S C, is directed towards the centre of the earth, in a line perpendicular to the axis; and the equator, as well as all the circles parallel to it, are divided into equal parts by the circle of illumination: but since the extent of the enlightened part of the earth is equal to that of the dark part, the length of the day must be equal to that of the night, at every point on the surface of the earth. The epochs at which the centre of the earth is in these two positions have been denominated the *equinoxes;* and as the sun is then in the plane of the equator, that circle has thence received the name of the *equinoctial line*, or simply, the *line.*

The time which elapses during the earth's motion from the point A to the point B, and during which the pole P approaches nearer to the sun, is denominated the *astronomical spring*, for the hemisphere E P F. As the earth, setting out from the vernal equinox, advances in its orbit, the plane of the equator becomes more and more depressed in relation to the sun, which appears to rise towards the pole. When the sun has attained its greatest apparent altitude at the point B, the semi-axis B P of the earth has then its greatest possible inclination towards the sun, which at this season appears nearest to the pole P: the day on which this occurs is the longest of the year. This situation of the axis in respect of the sun undergoes very little variation for several days, and the circle of the sun's apparent path is called the *summer solstice.* After this the sun appears to descend in the heavens, and returns to the plane of the equator. The earth having arrived at the second equinox C, autumn commences in the hemisphere which we inhabit. Having crossed the equator, the sun appears to descend below that circle, while the semi-axis C P inclines, at the same time, more and more in the opposite direction, until the earth has reached the point D; the axis then preserves for several days almost the same inclination, and the sun is at the *winter solstice.*

In the opposite hemisphere E*p* F, the succession of the seasons is reversed, so that the spring of this hemisphere corresponds to the autumn of the other, the summer to the winter, and so on.

We remark further, that the orbit of the earth A B C D, being an ellipse or oval, having the sun in one of its foci, the earth employs a greater number of days in moving from the vernal equinox A, through the summer solstice B, to the autumnal equinox C, than in describing the other half of its orbit. This circumstance gives to the northern hemisphere which we inhabit, the advantage of a spring and a summer a little longer than those enjoyed by the inhabitants of the southern hemisphere.

The early astronomers, in order to estimate more correctly this apparent motion of the sun, referred it to the constellations or groups of fixed stars through which he appears successively to pass. These are twelve in number. The following are their names, and the characters which are used for representing them:

♈ Aries,	♋ Cancer,	♎ Libra,	♑ Capricornus,
♉ Taurus,	♌ Leo,	♏ Scorpio,	♒ Aquarius,
♊ Gemini,	♍ Virgo,	♐ Sagittarius,	♓ Pisces.

From a fancied resemblance of these groups of stars to the animals whose names they bear, astronomers, in the infancy of the science, gave the name of *Zodiac* (from a Greek word signifying *animal*) to the zone occupied by the twelve constellations. Each constellation is called a *sign.* It is proper to remark, that, in consequence of a peculiar but very slow motion of the axis of the earth, the constellations no longer correspond to the same points of the terrestrial orbit as in ancient times; but, as we confine the name of *signs* to the twelve divisions of the circumference of the circle which measures the whole revolution of the earth, and as these divisions, each of which

contains 30 degrees, do not change, the vernal equinox always corresponds to the first point of the sign *Aries;* the summer solstice coincides with the first point of *Cancer;* the autumnal equinox falls upon the first point of *Libra;* and the winter solstice upon the first point of *Capricorn*, although the constellations or groups of stars to which the names belong have ceased to correspond to these seasons.

In consequence of the inclination of the plane of the terrestrial equator to that of the ecliptic, the sun passes successively through the zenith of all the points of the earth's surface comprised between the two circles parallel to the equator, upon which the rays of the sun fall vertically at the two solstices. These limits, at which the sun appears to stop and then return in the same course, have received the name of *tropics*. That which corresponds to the summer solstice, is called the *tropic of Cancer*, and the other, the *tropic of Capricorn*.

The circles which circumscribe towards each pole, the part of the earth's surface deprived of the solar rays when the sun is at its greatest distance from the equator in the opposite hemisphere, are denominated polar circles; the one is called the *arctic*, and the other the *antarctic* polar circle.

The surface of the earth is thus divided into five *zones*, or *belts*, by the polar circles and the tropics: those which are enclosed by the polar circles, being deprived of the light of the sun for a part of the year, and during the other part, receiving its rays but very obliquely, have deservedly received the name of *frigid*, or *frozen zones*. Two other zones, one in each hemisphere, comprehended between the polar circle and the tropic, receive the sun's rays less obliquely than the frozen zones, but never vertically; these are the *temperate zones*. Lastly, the zone comprehended between the two tropics, every point of which passes twice under the sun in the year, and which receives constantly the solar rays, in a direction very little oblique, has obtained the name of the *torrid zone*.

The ancient geographers frequently made use of a division of the earth into climates, which was founded upon the length of the day, compared with that of the night, at the summer solstice. The climates are counted by the difference of half an hour, until they reach the polar circle, where the differences succeed each other more rapidly; from that circle to the pole they are reckoned by months.

The contrast of the seasons, in the hemispheres situated to the north and to the south of the equator, has given rise to certain distinctions which it is necessary to know, as they are sometimes met with in the old books of geography. The people who live under the same meridian, and at the same latitude, on opposite sides of the equator, are called *antœci;* they reckon the same hours of the day at the same instant, but they have opposite seasons. Those who live under opposite meridians, upon the same side of the equator, and at equal distances from it, are called *periœci:* they reckon at the same instant opposite hours, the first having midnight when the second have mid-day; but being on the same side of the equator, they enjoy the same seasons.

The ancient geographers also distinguished the inhabitants of the earth according to the projection of their shadows. They called those who inhabit the two temperate zones *heteroscii*, because their shadows, being always turned towards that pole which is elevated above their respective horizons, fall consequently in opposite directions. The inhabitants of the frozen zones, to whom, at one time of the year, the sun never sets, see that luminary make a complete circuit round the heavens, so as to project their shadows in all directions; hence they have been called *periscii*. Lastly, the inhabitants of the torrid zone are called *amphiscii* or *ascii*, because their shadows, which are almost nothing at mid-day, are directed by turns towards both poles.

We pass on to a distinction of more importance. In considering local phenomena, we distinguish three positions of the *sphere*, that is, of the assemblage of the different circles which we have now pointed out, and which serve to determine the relative positions of the heavenly bodies.

To the inhabitants at the equator, the sphere is said to be *right*, because the plane of that circle passing through their zenith is, with regard to them, perpendicular to the horizon; and hence the heavenly bodies, which, in their apparent diurnal motion, describe parallels to the equator, appear to rise and set vertically in reference to the horizon. To the people who dwell between the equator and the poles, the sphere is said to be *oblique*, because the equator cutting their horizon obliquely, the diurnal courses of the heavenly bodies are inclined to the horizon. Lastly, at the poles, the horizon coincides with the equator, so that the heavenly bodies describe circles parallel to the horizon: to an inhabitant of the pole, therefore, were there any such, the sphere would appear *parallel*.

As the limits of the zones and of the climates depend upon the inclination of the axis of the earth to the plane of the ecliptic, it is of importance to determine this

inclination. We may easily discover it by observing at the same place the greatest and least latitude of the sun, when he passes the meridian at the summer and winter solstices. For, since in both cases the sun is equally distant from the equator, on the one side and on the other, this circle must cut the meridian at a mean altitude between the extreme altitudes of the sun; and the difference of these altitudes will be double of the angular distance to which the sun recedes from the equator towards the north and south. By observing the solstitial altitudes we are therefore enabled to determine at once, both this distance, and the position of the equator above the horizon, as well as the latitude of the place of observation.

At Paris, for example, the sun, at the summer solstice, rises to 64° 38′ above the horizon, and to 17° 42′ at the winter solstice. The sum of these altitudes is 82° 20′, of which the half is 41° 10′: this is the height of the equator above the horizon of Paris; and, taking its complement to a right angle, or to 90°, we find that the distance of the equator from the zenith, or the latitude of Paris, is 48° 50′.

But subtracting the one of these altitudes of the sun from the other, we find a difference of 46° 56′, the half of which or 23° 28′, is the distance in degrees and minutes to which the sun recedes from the equator towards either pole. Such is the angle which the planes of the equator and ecliptic make with each other.

This is what is called the *obliquity of the ecliptic*. It is not invariable; observations, joined with the calculation of the forces which produce the motions of the planets, have shewn that the inclination of the terrestrial equator is subject to a diminution of about 47″ in a century, till it reaches a certain limit which is not yet exactly determined, after which time it will begin to increase. The terrestrial zones vary therefore in proportion to this change. By assuming the mean of the present obliquity of the ecliptic, we find that if we divide the surface of the earth into 10,000 equal parts, the torrid zone will occupy 3982 of these parts, the two temperate zones, 5191, and the two frigid zones the remaining 827 parts.

The two combined motions of the earth produce a difference in estimating *time*, which affects the methods by which geographical positions are determined. We distinguish several kinds of *days* and of *years*.

The *tropical* or *solar year* is the time which the earth occupies in returning to the same point of the ecliptic. It consists of 365 mean days, 5 hours, 48 minutes, 50 seconds, and is denominated the *tropical year*, because this interval of time must elapse, in order that the seasons may return in the same order.

In consequence of the apparent motion of the poles, or of the axis of the earth, the equinoctial points, as well as all the other points of the ecliptic, appear to have a retrograde motion with regard to the stars. This motion is denominated the *precession of the equinoxes*. Astronomers have estimated it at about 50″.1 in a year; and the time which the earth occupies in passing through this arc must be added to the tropical year, in order to obtain the time of a revolution in respect of the stars. The period of this revolution is named the *sidereal year*, and consists of 365 days, 6 hours, 9 minutes, and 10 seconds.

The length of the astronomical *mean* day, which is divided into 24 hours, is determined by the interval which elapses between two consecutive passages of the sun over the meridian of the same place, supposing this apparent motion of the sun to be performed with an uniform velocity. But it is necessary to observe, that our earth does not occupy quite 24 hours in its rotation, on account that in the same time which it employs in revolving round its axis, it advances in its orbit towards the east about a degree in space, corresponding to four minutes, or more exactly to 3 minutes 56 seconds of time. Hence it follows, that the interval between two passages of a fixed star over the same meridian, which measures the true time of the earth's rotation, or of the *sidereal day*, is only 23 hours, 56 minutes, 4 seconds. The sidereal day can scarcely be employed for measuring time in civil life, because the sidereal hours never coincide with the solar hours.

We make use therefore of the *solar day*, that is, of the time of a revolution of the earth about its axis, in reference to the sun; but this time is not the same at all seasons of the year. This inequality arises from two distinct causes: the oblique position of the ecliptic with regard to the equator, and the inequality of the apparent motion of the sun in the ecliptic. By reason of the obliquity of the ecliptic, the arc of the equator which passes the meridian in the same time with the diurnal arc of the ecliptic, is not always equal to it, but is sometimes greater and sometimes less. With regard to the second cause, we observe that the sun, being placed in one of the foci of the elliptic orbit of the earth, appears to move more slowly in the six northern signs than in the six southern; and this difference of velocity is sufficient to produce

an inequality in the diurnal arcs of the equator. It results from the combination of these two causes, that the length of the solar day, compared with the time of the earth's rotation, is sometimes less and sometimes greater than twenty-four hours; and this inequality will always be greatest when the two causes which we have just explained concur in accumulating the differences in the same direction. The series of these differences forms what is called the *equation of time*, or the quantity which, if we wish to get the *mean* or astronomical time, must, at certain seasons, be added to, and at other seasons subtracted from, the hour indicated by the sun, or the *true time*. Now, it is for mean time that the astronomical tables are constructed, by the help of which we calculate the motions of the stars, and from these motions deduce the geographical positions of places on the earth.

We have now considered the earth in relation to the sun; but geography also derives essential aid from the theory of the motions of the moon. This satellite of our planet performs its revolution round the earth in 27 days 7 hours, 43 minutes 11 seconds, usually called a *periodical month*. It is to be observed, however, that the moon employs more than this time to return to the sun after each conjunction. The cause of this difference is, that the earth, and consequently its satellite, the moon, advances in the ecliptic while the moon is describing her orbit; so that before the moon comes into the same position relatively to the sun, 2 days and about 5 hours elapse beyond the time required for completing a revolution round the earth. The whole time occupied in returning to the sun is 29 days 12 hours, 44 minutes 2.8 seconds. This interval of time is called a *synodical month*, or *lunar month*. It commences from the moment when the moon is directly between the sun and the earth, in which position the moon is said to be in *conjunction*.

In describing its orbit, the moon, with regard to the sun, assumes various situations, from which arise its divers aspects, or *phases*. The moon being an opaque body, can be seen only in as far as it reflects the light that it receives from the sun; it can be visible to us, therefore, only when it begins, after being in *conjunction*, or in the same straight line with the sun, to turn towards the earth a portion of its enlightened disk. This portion increases according as the moon recedes from the sun, until it arrives at the point of its orbit opposite to the sun, when, the earth being between it and the sun, we see the whole enlightened hemisphere; the moon then appears full, and is said to be in *opposition* with the sun.

The conjunction and opposition of the moon with regard to the sun, or the new and full moon, are what are called the *syzygies*. When the moon is distant from the sun a fourth part of the circumference, it is in *quadrature*, and shows only one-half of its enlightened hemisphere. It is the first or last quarter, according as the round edge of the enlightened part is towards the west or east.

One would be led to suppose that the moon, every time it comes into conjunction with the sun, ought to conceal from us the whole, or, at least, a part of the disk of the sun; and that every time it is in opposition, it ought to pass through the shadow which the earth projects behind it; so that there would be, in the former case, an *eclipse of the sun*, and in the latter, an *eclipse of the moon*. These phenonema do not, however, occur at every new and full moon; and the reason is, that the plane of the moon's orbit is inclined to that of the ecliptic, and that these two planes meet one another only in their line of common section, which passes through the centre of the earth. Hence the moon is not situated in the plane of the ecliptic, except when it passes through one or other of the extremities of this line, that is to say, when it is in the *nodes* of its orbit. When the conjunctions and oppositions take place at the same time that the moon is in, or near, its nodes eclipses will happen; in the opposite cases, no eclipse takes place. We proceed now to point out in what manner the observation of these phenomena enables us to determine the longitude of a place upon the earth.

We have already seen, that in order to find the difference of longitude between two places, it is only required to ascertain precisely the hour which is reckoned at the same instant at each of these places, by the observation of some instantaneous phenomenon which can be seen at both.

The eclipses of the moon appear at first view the most favourable phenomena; for the entrance of the moon into the shadow of the earth takes place at the same instant for all the points of the hemisphere which is then turned towards the moon; that is, for all the places where the eclipse can be observed; besides, the spots visible upon the moon's face afford the means of making several observations upon the same eclipse, by marking with precision the time of the disappearing of each spot at its entrance into the shadow, or the *immersion*, and that of its re-appearing at its

coming out of the shadow, or the *emersion*. Supposing, then, that we have determined at each place the true time of this observation, the difference of these times, converted into degrees of the equator, will give immediately the difference of the longitudes. But eclipses of the moon present this great inconvenience, that the instant when the lunar disk enters into the true shadow of the earth, that is to say, the instant which marks the commencement of the eclipse, can never be assigned with precision; we cannot therefore be certain of not erring a few seconds of time in the determination of the phases of an eclipse of the moon; for this reason, the use of lunar eclipses for determining longitudes is now generally abandoned.

The use of the eclipses of the satellites of Jupiter, for the purpose of finding longitudes, was first proposed by Cassini in 1668. The theory of these eclipses is the same with that of the eclipses of the moon; for the satellites of Jupiter, when placed in circumstances similar to those which produce the eclipses of the moon, fall, in like manner, into the shadow of their primary planet: and if we observe at the same time, at several places, their immersions and emersions, we may make the same use of these, for the determination of the longitudes, as of the eclipses of the moon. But here, as in the eclipses of the moon, the precise moment of immersion and of emersion is always a little uncertain; particularly with regard to the second and the third satellites. Nevertheless, the use which may be made of them has induced astronomers to frame tables for predicting their immersions, in order that corresponding observations at different places may not be necessary.

The eclipses of the sun are no less proper than those of the moon, for determining longitudes. It is sufficient for this purpose that we observe at each of the places the beginning or the end of the same eclipse; but the calculation becomes more difficult than in the case of a lunar eclipse, because the relative situation of the sun and the moon is not the same for the different parts of the earth's surface at which these two bodies are visible at the same time. The case of the moon is the same as that of the clouds, which, seen from a particular point, appear situated under the sun, and project their shadows over a limited space, beyond which the sun shines in all its splendour. This spectacle varies continually, according as the sun, the cloud, and the spectator, change their situations. To employ the observation of a solar eclipse for the determination of longitudes, it is necessary to determine several of its phases, but particularly the beginning and the end; to deduce from thence the middle of the eclipse, and to obtain from the astronomical tables the proper *data* for fixing the respective positions of the lines described by the centre of the sun and that of the moon during the eclipse, in order that we may be able to calculate the instant when these two bodies were in conjunction. If we know, then, the hour at each of two places corresponding to this same instant, the difference of the hours will indicate the difference of the longitudes of these places. But the eclipses of the sun do not give the longitudes of places with much precision. The celestial phenomenon of most frequent occurrence, which can be properly employed for the determination of the longitude, is that which is called an *occultation*, or the passage of a star behind the disk of the moon; it is, at the same time, one of those which may be observed with much precision. It is necessary, in the first place, to determine from the observation the moment when the centre of the moon is in conjunction with the star: this fixes the absolute position of the moon. In the next place, we must find, either by means of calculations made beforehand, or by the comparison of corresponding observations, the hour it was, at the moment of this conjunction, at a place whose position is known. The difference of longitude is then obtained as in the other methods.

All these methods evidently resolve themselves into the following proposition: "*To determine, with reference to the place of which the longitude is sought, the position of a celestial body at a given moment, and to deduce from this position the hour it was at the same instant at another place, of which the situation is previously known.*" Hence it follows that, without waiting for a celestial phenomenon, our place on the earth may be determined from the variation alone of the angular distance between two heavenly bodies whose motion is known. But it is also evident that this angular distance must vary by the motion of one or both of the bodies with so much rapidity as to present very considerable variations in 24 hours. The moon alone affords us these advantages; as its motion in its orbit is at the rate of nearly 13° a-day, a change of a single minute of a degree in its position, corresponds to a little less than two minutes of a time, or 30′ of a degree in longitude. Now, by help of the accurate instruments at present in use, we can, by taking the angular distance of the moon from a star, or from the sun, ascertain with great precision the position of that body, and consequently can determine the hour, within a few seconds, under a given meridian, at the moment of observation. This is the method employed for determining the longitude at sea.

To lunar observations, however, it is necessary to join the use of *chronometers*, or *time-keepers*, which serve in the intervals during which observations of the distance of the moon from the sun, or from a star, cannot be obtained. These instruments would alone accomplish the end proposed, if it were possible to construct them with such accuracy, that when once regulated to mean time under a given meridian, their motion would remain exactly the same during the whole continuance of the voyage, for they would then at all times point out the hour under that meridian.

To all these methods of determining geographical positions, furnished by the observation and calculation of the celestial motions, is now added the use of signals made by gunpowder. In a very elevated place, during a serene night, a quantity of powder is from time to time inflamed in the open air; two observers, each provided with a clock, and stationed at the places of which the difference of longitude is required, mark with care the appearance of the flashes — an appearance which, notwithstanding the distances, is instantaneous for the two places, in consequence of the prodigious velocity of light. The difference of the times indicated by the two clocks will give the difference of longitude sought.

§ 2. *Of the Dimensions and Figure of the Earth.*

The active curiosity of man, not satisfied with having demonstrated that the earth is a globe revolving in space, instigated him to ascertain the exact dimensions of the planet which had been assigned to him as his abode. An arc of the celestial meridian being measured, it was natural to conclude, that as this arc ought to correspond to a similar meridional arc on the surface of the earth, it would be necessary only to measure this latter curve, in order to find the dimensions of the entire circle, and consequently of the circumference of the globe.

In the century before the Christian era, Posidonius, who lived at Rhodes, erroneously supposing that the cities of Alexandria and Rhodes had the same longitude, measured the arc between these two places, as an arc of the terrestrial meridian. If we except this error, the method of Posidonius was the true one. Erastosthenes made use of a *gnomon* placed vertically in the centre of a concave sphere; he knew that at Syene the sun, at the time of the solstice, projected no shadow; he remarked that at Alexandria, the gnomon, at the same instant, projected its shadow over the fiftieth part of a circle; hence he concluded the latitude of Alexandria to be 7° 12′ north of Syene, which must have been situated under the tropic. But according to the moderns, the latitude of Syene is 24° 5′, consequently that of Alexandria would be 31° 17′, which is not far from the truth. But however accurately this observation might be made, it could not furnish the Greek astronomer with a solid basis for the measurement of the earth, as the two points which he compared are not situated exactly under the same meridian.

The measures of a degree attributed to the Arabians exhibit in like manner only equivocal results, and such as cannot be reconciled with the truth but by means of arbitrary assumptions.

After the revival of letters, the European astronomers made many fruitless attempts to measure accurately an arc of the meridian. Fernel, in the year 1530, measured a degree between Paris and Amiens, and, notwithstanding the imperfection of his instruments, found it to be 57,070 toises, a result almost identical with that obtained by modern geometers. In 1617, Snell, after having determined the celestial arcs comprised between Alkmaer, Leyden, and Bergen-op-Zoom, by the difference of the altitudes of the pole in those three places, calculated the terrestrial distances of the three parallels on the meridian, by means of a series of triangles connected together, and proceeding from a base which was ascertained by actual measurement on the ground; he thus found that the length of a degree of the meridian was 55,021 toises, or 58,639 English fathoms of six feet each. Norwood, an English astronomer, in 1635, measured, by a very imperfect method, the arc of the meridian between London and York. He found the degree to be 57,310 toises, or 61,078 fathoms, which result is a very near approximation. About fifteen years afterwards, Riccioli, a celebrated Italian astronomer, pretended to have found, by a measurement carried on in the environs of Bologna, that a degree of the meridian was 62,900 toises, or 67,036 fathoms; but this result is almost 6000 toises, or 6395 fathoms above the real value.

It was by applying the telescope to instruments used in the measurement of angles, that Picard was enabled to undertake with the necessary precision, the new measure of a degree which he commenced in 1669. He chose for the theatre of his operations the space contained between Sourdon in Picardy, and Malvoisine, on the borders of

Gâtinais and Hurepoix. In order to ascertain the itinerary distance which separates those two places, which are situated under the same meridian, he connected them by a series of triangles, and observed successively all the angles of each triangle, which furnished him with a means of verification for each, as the sum of the angles of every triangle is equal to 180°. He scarcely ever obtained this sum; but the inevitable errors only amounted to a few seconds.

A triangle is indeterminate if only the angles are given, for then we can obtain no more than the ratio of the sides; but one side, together with the angles, being known, the other parts are easily found. Picard therefore measured, with a precision till then unattempted, a distance of 5663 toises, or 6035 fathoms, on the road from Villejuif to Juvisy. With this base he calculated the side of one of his triangles; and from this he found the side of a second; and thus he proceeded from triangle to triangle, as far as Sourdon. Here again a straight line was measured as a *base of verification*, and it differed only by one or two toises from the length computed from the first measure. New triangles were afterwards carried forward as far as the cathedral of Amiens, where the operation ended.

It was then necessary to find the length of the line which joins the extreme points, and its position with respect to the meridian of Paris, in order to ascertain the distance in the direction of this meridian; and also to determine accurately the length of the corresponding arc of the celestial meridian, that is, how many degrees and parts of a degree it contained, in order to deduce its ratio to the whole circumference.

In this second part of his operation, which depended on the observation of the stars, Picard selected a star near the zenith, in order to obviate the effects of refraction, which, in his time, produced much uncertainty. By this means he found the difference of latitude between Malvoisine and Sourdon to be 1° 11′ 57″; that it corresponded, in the direction of the meridian, to a distance of 58,430 toises, or 62,272 fathoms; and hence he concluded the length of the degree to be 57,064 toises, or 60,816 fathoms.

He found also, between the cathedral of Amiens and Malvoisine, a difference in latitude of 1° 22′ 55″; and a distance of 78,850 toises, or 85,034 fathoms, which gave for the degree 57,057 toises, or 60,808 fathoms; he chose the mean of both these results, *viz.* 57,060 toises, or 60,812 fathoms; whence the whole circumference contains 21,892,320 fathoms, or about 24,880 English miles.

The accuracy of Picard's operation seemed to remove all doubt respecting the dimensions of the earth, when the important experiments made by M. Richer at Cayenne in 1672, showed that the figure of the earth was not perfectly spherical, and that consequently the degrees were not equal. His pendulum clock, regulated at Paris to the mean motion of the sun, after being transported to the island of Cayenne, which is only about 5 degrees from the equator, was found to lose every day 2 minutes, 28 seconds. The length of a pendulum, which at Cayenne beat seconds exactly, being marked upon an iron bar, which was brought to France, it was observed that the seconds pendulum of Cayenne was a line and a quarter shorter than that of Paris, which measured 440.57 lines, or 39.156 English inches.

This experiment proved that the force of gravity is less at Cayenne than at Paris; for when the pendulum is drawn aside from the vertical position, the force which causes it to return is gravity; and the interval of time it takes to return to that situation is shorter, if the power of gravity increases, and longer if it diminishes. Hence, since the pendulum oscillates more slowly at Cayenne than at Paris, or beats a less number of seconds in the course of a day, it is clear that the force of gravity is less at the former place than at the latter.

This experiment perfectly coincided with the reasoning of mathematicians, who began to consider the earth as depressed towards the poles: and the cause of the augmentation of gravity, or the attracting force, was explained by the depression of the surface, which therefore approaches nearer to the centre.

Huyghens, a Dutch mathematician, even before the experiment of the pendulum was known, considering that bodies which revolve round a centre, or an axis, acquire a *centrifugal force*, which tends constantly to make them fly off from this centre or axis, as we observe in a stone whirled about in a sling, concluded that the fluid diffused over a considerable part of the surface of the earth could not assume a form perfectly spherical, as it must be affected at the same time both by the centrifugal force and by the force of gravity impelling it towards the centre. He supposed, therefore, that the earth must be depressed towards the poles, and that the axis of rotation is shorter than the equatorial diameters by $\frac{1}{578}$, which is equal to about fourteen miles. Newton, to whose profound sagacity we owe the discovery of the principle of universal gravitation, considered gravity at the surface of the earth not as a constant

force everywhere directed towards the centre of our globe, but as the result of the mutual attractions of all the particles of the earth to each other; and found that this force varies a little in intensity and direction, when the earth is regarded as not being perfectly spherical. If the figure of the earth depends upon gravity, gravity itself is also modified by the figure of the earth; whence, the earth having once assumed the oblate figure, this figure alone, independently of the centrifugal force, ought to render gravity weaker under the equator than under the poles. Newton, proceeding on this principle, and supposing the earth homogeneous in all its parts, found, for the quantity of depression, $\frac{1}{230}$, or about 35 miles.

Those conclusions, differing as to the quantity of the result, but agreeing with respect to the alteration which the figure of the earth ought to undergo in consequence of the centrifugal force, have been developed by the most delicate and profound calculations. It has been demonstrated, that the earth cannot be a homogeneous mass, but that its density ought to increase in descending to the centre; and that, in all cases, an elliptical figure satisfies the laws of the equilibrium of fluids.

At the present time, the theory of the diminution of gravity towards the equator has been confirmed by a great number of observations on the pendulum, from Lapland to the Cape of Good Hope; and from their general agreement it has been concluded, that the depression of the globe is equal to very nearly the 290th part of its axis.

The depression of the earth is also verified by measures taken on the terrestrial globe; for it results from this theory, that the degrees of latitude cannot be equal throughout the whole extent of the meridian, but that they ought to be augmented in the flattened part of the meridian, that is, towards the poles, and diminished in the most convex part of the same meridian, or near the equator. These consequences, which follow from the fundamental notions of elementary geometry, were however for some time mistaken by men of very great merit, such as Cassini, and D'Anville, who affirmed that the earth was elongated towards the poles: in other words, that the terrestial spheroid revolved about its greater axis; a supposition entirely incompatible with the theory of gravitation and the equilibrium of fluids.

In France, the notion prevailed for forty years, that the earth is a spheriod protracted towards the poles. At length, the Academy of Sciences resolved to ascertain by actual experiment the truth of the theoretical conclusions on the subject, and selected from their own body two companies of mathematicians, who were dispatched, the one in 1736 to Peru, and the other in 1737 to the polar circle, to measure a degree of the meridian in the regions bordering on the equator and near the pole. The results thus obtained, compared with each other, and with the degree measured in France by Picard, though they did not entirely agree with respect to the quantity of the depression of the earth at the poles, completely dissipated all doubts of the fact. The degree measured at the polar circle exceeded that of the equator by 669 toises, or 703 fathoms; and the degree measured in France, though smaller than that of the polar circle, still surpassed that of the equator by 307 toises, or 327 fathoms.

Astronomers and mathematicians still continued to doubt respecting the true dimensions and ellipticity of the earth, when a political project afforded an opportunity for undertaking a new measure of the arc of the meridian which traverses France. The National Convention had ordered that a uniform and permanent system of weights and measures should be established. The philosophers proposed to found the basis of this system upon nature, and to *take as the primitive unity of measure*, or the *metre*, the *ten millioneth part of the quadrant of the terrestrial meridian*, that is, of the distance between the equator and the pole. It was said that a metrology founded on such a basis would belong to every age and nation; and it was therefore determined that the new metrological system should be rendered more authentic, by founding it upon new operations, conducted with a precision till then unknown, and directed by the most able astronomers. Delambre and Mechain were appointed to measure the arc of the meridian intercepted between the parallels of Barcelona and Dunkirk. These two celebrated geometricians measured the angles of 90 triangles with repeating circles constructed on the principle of Borda; they observed with these instruments, five latitudes at Dunkirk, Paris, Evreux Carcassone, and Barcelona. The two *bases* near Melun and Perpignan were measured with platina and copper rules, and were found to agree, to a few inches, with the measures calculated. Minute attention prevented or rectified the smallest errors. The most eminent of the French mathematicians, together with a number of others sent from different countries, verified and sanctioned all the calculations. No doubt, therefore, can be entertained respecting the accuracy of the results of this vast enterprise, which commenced in 1792, and terminated, as far as regards the measurement, in 1798.

It has been proved, that the degrees of the meridian diminish towards the south, and increase towards the north. But this augmentation of the terrestial degrees does not follow a regular and constant progression. Therefore no meridian whatever can be a regular ellipse. It is probable that the earth itself is not a *solid of revolution*, that is, a figure circumscribed by the revolution of the same ellipse round its axis. However, these irregularities, which appear extremely small in comparison with the mass of the earth, may, without inconvenience, be overlooked.

The meridian of France, which MM. Biot and Arago have lately prolonged, by a very tedious operation, as far as the isles of Iviza and Formentera, considered separately, gives for the quantity of the depression $\frac{1}{1}\frac{1}{0}$, and, by comparing it with the degree of Peru, it would give $\frac{1}{3}\frac{1}{2}$.

This latter result, adopted by the French commissioners of weights and measures, coincides with what was found by observations of the pendulum. It agrees also with several celestial phenomena occasioned by the non-sphericity of the earth; for this planet being swelled out towards the equator, the attraction of the sun and moon is there more powerful than towards the poles; and, as the plane of the equator is inclined to the ecliptic and lunar orbit, the additional attraction communicates to the axis both a progressive motion, which causes the equinoctional points to retrograde, and an alternate motion, by which it oscillates around the position it would have by virtue of the first motion. The first of these motions is called the *precession of the equinoxes*, and the last the *nutation of the axis*. M. Burg having calculated the causes of those perturbations, and the influence of the earth's depression, found the latter to be $\frac{1}{3}\frac{1}{0}\frac{1}{3}$.

The degree measured at the polar circle by the French academicians in 1737, was that which differed the most from the general result deduced from all the other data. Accordingly the measurement of a new degree, at the same place, was undertaken by M. Svanberg, a Swedish astronomer. The French academicians had measured only an arc of 57′, but M. Svanberg extended the operation to 1° 37′. By the definite result of this measure, a degree of the meridian at that latitude was found to be 196 toises shorter than that which was measured in 1737.

Even the planets, which are many millions of leagues distant from us, have contributed to fix our ideas respecting the oblate figure of the terrestial spheroid. The alteration of the spherical figure, resulting from the rotation of a celestial body on its own axis, appears also in the planet Jupiter, where it is so sensible that the difference of the two diameters of the disc may be discerned by means of a telescope. This difference is almost one-tenth; and when we compare the exact measure of this depression, the dimensions of Jupiter, and the time of his rotation with those of the earth, we find for this latter planet a flatness proportioned to $\frac{1}{3}\frac{1}{8}\frac{1}{8}$; which does not differ very widely from the result of the French measure.

We may now consider the quantity of the earth's depression as sufficiently determined for geographical purposes. There are few geographers indeed, who, in the construction of maps on a small scale, have paid attention to the depression or ellipticity of the earth. Maupertuis, Murdoch, and others, have indeed calculated tables, which give the increase of the degrees of longitude on an elliptic spheroid. But the depression of the earth, reduced to the $\frac{1}{3}\frac{1}{0}\frac{1}{0}$ of the equatorial diameter, not producing between that diameter and the axis which passes through the poles more than a difference of about 26 miles, would give for a spheroid, the major axis of which would be 3 feet, a difference of only about one-eighth of an inch, a quantity which it would be extremely difficult to observe with precision in the construction of globes. They may therefore be made perfectly spherical. In topography and special hydrography the effect of ellipticity is perceptible not only in the degrees of latitude, but also in those of longitude; and it is the duty of a careful geographer to attend to it, by following the methods which several late works have given for expressing those differences.

We shall now terminate this short historical account of the investigations relative to the figure of the earth, by placing before the reader the results deduced from twenty of the principal and most accurate measurements of arcs of the terrestial meridian that have been made in various parts of the world.

Dimensions and Ellipticity of the Earth.[*]

	English Feet.		*Miles.*
Equatorial Diameter	= 41,843,330	=	7924.873
Polar Diameter	= 41,704,788	=	7898.634
Difference of Diameters, or Polar Compression	= 138,542	=	26.239
Ratio of Diameters	= 302.026 : 301.026		
Ellipticity	$\frac{1}{301.026}$		
Circumference of the Equator		=	24897

[*] Encye. Brit. Article, *Figure of the Earth.*

From these elements the following table is computed, showing the length of a degree of the meridian or latitude, and of a degree of longitude, at every tenth degree of latitude:—

Lat.	*Degree of Latitude.*		*Degree of Longitude.*	
	Eng. Feet.	Miles.	Eng. Feet.	Miles.
0°	362,734	68.70	365,152	69.16
10	362,843	68.72	359,640	68.11
20	363,158	68.78	343,263	65.01
30	363,641	68.87	316,493	59.94
40	364,233	68.98	280,106	53.05
50	364,862	69.10	235,171	44.54
60	365,454	69.21	183,029	34.67
70	365,937	69.31	125,254	23.72
80	366,252	69.36	63,612	12.05
90	366,361	69.39	0	0

§ 3. *Of Globes and Maps.*

To fix well in the mind the various parts of knowledge which constitute the science of geography, it is necessary to have before our eyes a representation of the earth and its different parts, on a small scale. The simplest of these representations is the *artificial terrestrial globe;* which shews as nearly as possible the earth in relief, with its seas, continents, and islands; also its mountains, rivers, and principal towns. All these are placed in their *true position* on the artificial globe; they are represented in their totality, and relatively to each other, as they are situated on the earth itself, according to astronomical observations and geodesical measurements. A geographical map can only give perspective views of a part of the globe, in which there are always more or less of conventional errors.

The artificial globe affords a representation of those mathematical circles which serve to give us an idea of the various relations of the earth with the heavenly bodies, and of terrestrial places with each other. Thus, the terrestrial equator, the tropics, the polar circles, are represented on the surface of the globe; then, the other parallels to the equator, from 5 to 5, or from 10 to 10 degrees, according to the size of the globe. The meridians are also described from 5 to 5 or from 10 to 10 degrees; and are numbered at their point of intersection with the equator. The parallels to the equator are sometimes numbered at the points where they intersect the conventional first meridian. The ecliptic is also represented on good globes.

The poles are the extremities of the axis about which the globe turns. These two pivots are fixed to a metallic circle which surrounds the globe from one pole to the other, so that on turning the globe, every terrestrial point passes under this circle. It serves, therefore, as a *general meridian*, and is so called. The degrees of latitude, and on large globes, even the minutes and seconds, are marked on the general meridian.

The bearers, or feet of the whole machine, support a circular band of metal or wood, which divides the globe, in whatever position it may be placed, into two hemispheres, one superior, the other inferior, and thus represents the *rational horizon.* This artificial horizon has several circles traced on its surface, on which are marked the degrees of the twelve signs of the zodiac, the names of those signs, the days of the month, and the thirty-two points of the compass.

The quadrant of altitude is a thin plate of brass, attached to the general meridian, and divided into 90 degrees, which serves, instead of compasses, to measure the distances, and determine the positions of places. The *horary circle* is fixed on the north pole; it is divided into 24 hours, and bears a moveable index, which turns round the axis of the globe. There is also at the foot of the globe a *mariner's compass*, which should be fixed in the parallel and the meridian of the horizon.

The globe serves, generally speaking, to illustrate the elements of mathematical geography. In order to shew its use, we shall now explain its construction. The most simple and most exact way of constructing a globe is to describe on its surface, by the means we are about to explain, the circles, lines, and points, which it ought to represent.

Let us suppose that two points, diametrically opposite, have been assumed to represent the poles, and fix the position of the axis of rotation: taking one of these points for a centre, at an equal distance from each, a circle must be described, which will be the equator; another great circle is drawn through the poles to represent the *first meridian*, which will be divided into 90 degrees, counting from the equator towards each pole: afterwards, setting out from this meridian, the circumference of the equator must be divided from degree to degree. These two circles being determined,

it is easy to mark on the globe any place of which the latitude and longitude may be ascertained from geographical tables; for it will be sufficient to mark the latitude on the first meridian, and through the point where it falls, to describe (the pole being taken for the centre) the circle parallel to the equator; then drawing a semicircle through the point of the equator on which the longitude falls and the two poles, we shall have the meridian whose intersection with the parallel already described marks the position of the place.

It is thus that the *circles of latitude* and *longitude* are traced on the globe, at the distance of ten or of five degrees from each other.

The *circles of latitude* are parallel to the equator; they therefore necessarily diminish till the last circle of latitude is identified with the pole itself. The *circles of longitude*, or the *meridians*, extend from pole to pole, cutting the equator perpendicularly, and are all equal to each other. The degrees of latitude are counted only on the circles of longitude, and *vice versâ*. The *degrees of latitude* are, therefore, small arcs of $\frac{1}{360}$ of a *circle of longitude*, intercepted by two *circles of latitude*. They would of course all be equal were it not for the small difference which proceeds from the depression, and makes them increase a little towards the poles. The *degrees of longitude* are arcs of $\frac{1}{360}$ of a *circle of latitude*, intercepted by two *circles of longitude*. Therefore the degrees of longitude go on diminishing in proportion as the circles of longitude come near each other; and at the point where all these circles, till then convergent, cut each other, that is to say, at the pole, there is no longer any difference of longitude.

The latitudes are reckoned from the equator. This origin is naturally determined by the circumstances of the earth's motion. It is otherwise with the longitude; for all the meridians being great circles, nature furnishes no reason for choosing one in preference to another, as a term from which to begin to count, or as *first meridian*. We need not be surprised, therefore, that geographers have varied much in their choice of this element.

Ptolemy fixed his first meridian at the Fortunate Isles, (now the Canaries), because they formed the most western limit of the countries known in his time; and as their extent from east to west was more considerable than from south to north, the former direction received the name of *longitude*, or length, the latter that of *latitude*, or breadth, terms which now bear a general application. This first meridian of the ancients is not known with certainty.

In order to render the manner of expressing longitudes in French geography uniform, Louis XIII., by an express declaration, ordered that the first meridian should be placed in the *Isle of Ferro*, the most western of the Canaries. Delisle, one of the first who endeavoured to give precision to geographical determinations, fixed the longitude of Paris 20 degrees east of that meridian. When it was known by more rigorous observations, that the difference of longitude between Paris and the principal town of the Isle of Ferro, was 20° 5′ 50″, it was necessary to advance the first meridian 5′ 50″ to the east of that point, so that it is now merely a conventional circle which passes through no remarkable point.

The Dutch had fixed their first meridian at the Peak of Teneriffe, a mountain situated in the island of that name, and then esteemed the highest in the world.

Gerard Mercator, a famous geographer of the 16th century, chose the meridian which passes through the island *Del Corvo*, one of the Azores, because in his time it was the line on which the magnetic needle suffered no deviation. It must be confessed, that this line forms the most natural and the most commodious point of departure with respect to maps of the world.

Some writers on geography understand by the term meridian of a place, only the half of the great circle corresponding with the celestial meridian; the other half, which is in the opposite hemisphere, with respect to the poles, is by them called the *anti-meridian*.

Geographers now begin to count the longitudes from the eastern side of the first meridian, and to reckon them in the same direction round the whole circumference of the equator, till they return to the western side of the meridian. In this way of counting, the longitudes increase to 360°.

These conventional arrangements have not been adopted by mariners. Astronomical observations having become of general use in navigation, and the tables which indicate the instant of the celestial phenomena, and the position of the heavenly bodies at different epochs, being always computed for the meridian of the principal observatory of each nation, navigators found it more convenient to refer to this meridian the points of the routes they followed. French mariners count from the meridian of

the observatory of Paris; the English from Greenwich; the Spaniards from Cadiz. Let us observe, moreover, that mariners estimate the longitude from the difference of the time which elapses between the passage of the meridians under the same heavenly body, or from the difference of hours counted at the same moment in two different places. If the mariner has advanced towards the east, the hour of the day, at the same instant of time, is later than under the meridian from which he set out; the contrary happens when he proceeds westward. It is necessary, therefore, when we convert a difference of time into a difference of longitude, to indicate whether the longitude is *east* or *west*. In this way of reckoning, the longitude is always counted on the side nearest the first meridian, so that it only embraces the semi-circumference: and the globe is divided into two hemispheres with respect to the first meridian; in the hemisphere situated to the west, the longitudes are said to be *west:* and in the other *east*. All *marine charts* are constructed according to this mode of reckoning.

In conformity with the ancient custom of geographers, we shall here point out the means of resolving various elementary questions by means of the artificial globe. It is proper, however, to apprize our readers that exact solutions of these problems can only be obtained by calculation. The greater part of the questions usually proposed as exercises on the globes, are either of a vague and frivolous nature, or so little connected with geography, as not to merit any particular notice.

The first use that is made of the globe is to determine the distance of one place from another. The shortest distance between two points on the sphere is measured by the arc of the great circle which joins them; and as all great circles are equal, the degrees of any one of them are exactly of the same length as those of the equator or meridian. We therefore measure with compasses the arc comprised between the proposed points, and carry it to the meridian or the equator, which are graduated; or we may stretch the quadrant of altitude between the two places, and observe the number of intercepted degrees. These converted into itinerary measures will give the distance required.

If, for example, the arc comprised between two places marked on the globe, and brought to the meridian, contains 10° 45′, we shall have the shortest distance between these points in miles, by converting the degrees and minutes into miles, reckoning $69\frac{1}{6}$, or in round numbers 70 miles, to a degree. The result will be $716\frac{3}{4}$ miles.

If the places whose distance we wish to ascertain are situated under the same meridian, it is only necessary to take the difference of their latitudes, and to convert it into itinerary measures. A difference of a few minutes in longitude has no sensible effect on the result.

It would be a great error to take the *difference of longitude in degrees*, of two places, situated on the same parallel, for the *measure of their distance;* this can only be done when the places are situated on the equator, which is a great circle; but the parallels being small circles, the radii of which diminish as we approach the poles, it follows from the principle stated above, that the absolute length of their arcs does not give the true measure of the shortest distance from the extremities of those arcs: this distance can only be measured by a great circle passing through the two extreme points. For as the radius of the parallel is shorter than that of the great circle, the arc of the parallel must necessarily have a greater curvature than that of the great circle comprised between the same points, and is consequently longer. The following is a striking example: Petersburg is almost under the same latitude as the Isle of Kodiak, in Russian America; the difference of longitude is about 180°, equivalent under this parallel to 6360 miles; but the shortest distance between the two places, counted on a meridian that is almost common to them, is 60 degrees of latitude, equivalent to 4240 miles. It is true, that to pass from the one place to the other in the direction of the meridian, it would be required to cross the polar ice.

It is necessary, however, in many cases, to measure the distance on the parallels, and, consequently, to know exactly the value of the degrees of longitude marked on the parallel circles. The globe renders the diminution of these degrees towards the poles sensible to the eye; our table indicates it in detail: but we should know the mathematical principles on which it depends. The length of the degrees marked on the parallels is proportional to the radii of those circles; but the radii of the equator, and of its parallels, are perpendiculars let fall from the different points of the meridian on the axis of the sphere, as the lines E C and H R, on the second figure on page 33. Consequently, if we take the radius E C for the length of the degree of the equator, and if we divide it into sixty-nine parts, each representing a mile, the number of these parts which the radius H R of the parallel L M may contain, will indicate the value of the degree of this parallel in miles. Hence it results, that, to determine the length

of the degrees on each parallel, we have only to deseribe on a line EC, which represents the length of the degree of the meridian, or of the equator, a quarter of a circle EP; divide it into degrees, and let perpendieulars fall from eaeh point of division on the radius CP; these lines will mark the respective lengths of the degree of the parallel for each latitude.

To find the latitude of any plaee on the earth, the globe must be turned round on its immoveable axis till the place comes under the fixed meridian; and the degree marked on the fixed meridian over the place will give the latitude. The longitude of the same place will then be found on the equator, at the point where this circle passes under the meridian. If we wish, on the contrary, to determine the position of a place, the longitude and latitude of which are known, we have only to bring the point of the equator which corresponds to the given longitude, to the fixed meridian, and, taking the given latitude on the meridian, we shall have the geographical position of the place.

The hour circle whieh is commonly adapted to the north pole of the globe, serves to indieate the hour in one part of the earth, when we know the hour it is in another; for, by placing the latter place under the meridian, after having fixed the index of the dial at the given hour, and by making the globe turn till the fixed meridian is over the place of which the hour is required, the index will show on the dial the hour wanted: it is later if the globe has been turned to the east, and earlier if it has been turned to the west.

If we wish to know the length of the longest day for all the points of a hemisphere, the northern, for example, we must place the meridian, so that the arctic polar circle touches the horizon of the globe: this horizon will then be identical with the circle of illumination. If we bring any point whatever of the proposed hemisphere to the meridian, and then fix the index of the polar dial at 12, and make the globe turn towards the east till the point marked enters into the horizon, the index will stop at the hour at which this point passes from the enlightened to the obscure part. The number of hours gone over on the dial will be the half of the duration of the day required. By bringing the pole nearer the horizon, we shall give the horizon the position which the circle of illumination occupies before and after the solstices, and we shall find, as above, the length of the day in each country at any time of the year. In this position of the globe, all the points which are at the same time on the western border of the horizon, are those at which the sun is seen to rise at the same moment that it is seen to set at those on the eastern border.

It is by studying the globe attentively that we come to understand perfectly the import of the terms *north* and *south*, *east* and *west*. Two terrestrial points, situated under the same meridian, are directly north and south of each other, and all the intermediate points, that is to say, all the points of the line of distanee, are equally north and south of each other, and all reciprocally on the same point of the compass. In like manner, any two points whatever, taken under the terrestrial equator, are direetly east and west of each other; and all the intermediate points are equally so, and are reciproeally on the same point of the eompass.

If we take two plaees, which are neither under the same meridian, nor under the equator, whatever their relative position may be otherwise, none of the intermediate places will, with respect to the others, be on the same point of the eompass. For the arc of a great eirele which measures the distances, is an arc of a vertical circle which passes through the zenith of the two places in question; but every vertical eirele, whieh is itself neither a meridian, nor perpendicular to the terrestrial meridian (like the equator), will eut all the intermediate meridians under angles unequal to each other. But it is these angles of position which determine the point of the eompass on whieh one plaee is relatively to another. Therefore, as all the intermediate places between the two plaees in question will offer angles of position unequal in degrees, each of them will be on another point, with regard to the following plaee, from what the preceding plaee was with regard to it. Thus, in following the shortest route between two places situated out of the equator, and under different meridians, the point of the compass varies at every step.

The direetions of the winds, or *points of the compass* with respeet to the meridional line, and the names assigned to them, are generally marked on the horizon. By this means we may ascertain the position of a place with respect to the sun, at the moment when it appears to rise or set, by observing on what point of the horizon the given place passes from the obseure to the enlightened part, or from this into the other. The globe, thus turned, affords the means of representing physieally all the phenomena of the annual motion of the earth.

The following table exhibits the *thirty-two points* of the *Mariner's Compass*:—

Situation upon the Compass.	*English Names.*	*French Names.*	*Italian Names.*	*Ancient Names.**
Degrees.				
0	NORTH (N.)	NORD (N.)	TRAMONTANA.	Boreas; Aparctias; Septentrion.
11¼	N. by E.	N. ¼ N. E.	¼ di T. Verso Greco.	
22½	N. N. E.	N. N. E.	Greco-Tramontana.	
33¾	N. E. by N.	N. E. ¼ N.	¼ di Greco-Verso T.	
45	*North-East* (N. E.)	N. E.	*Greco.*	Cæsias; Aquilo; (*sometimes* Boreas)
56¼	N. E. by E.	N. E. ¼ E.	¼ di Gr.-Verso Levante.	
67½	E. N. E.	E. N. E.	Greco-Levante.	
78¾	E. by N.	E. ¼ N. E.	¼ di Levante V. Greco.	
90	EAST (E.)	EST (E.)	LEVANTE.	Apeliotes; Subsolanus; (Eurus?)
101¼	E. by S.	E. ¼ S. E.	¼ di Lev. Verso Scirocco.	
112½	E. S. E.	E. S. E.	Levante-Scirocco.	
123¾	S. E. by E.	S. E. ¼ E.	¼ di Scirocco V. Levante.	
135	*South-East* (S. E.)	S. E.	*Scirocco.*	Euronotos; Vulturnus; (often Eurus.)
146¼	S. E. by S.	S. E. ¼ S.	¼ di Scir. Verso Ostro.	
157½	S. S. E.	S. S. E.	Ostro-Seiroeco.	
168¾	S. by E.	S. ¼ S. E.	¼ di Ostro. V. Scirocco.	
180	SOUTH (S.)	SUD (S.)	OSTRO.	Notos; Auster.
191¼	S. by W.	S. ¼ S. O.	¼ di Ostro V. Libeccio.	
202½	S. S. W.	S. S. O.	Ostro-Libeccio.	
213¾	S. W. by S.	S. O. ¼ S.	¼ di Libeccio V. Ostro.	
225	*South-West* (S. W.)	S. O.	*Libeccio.*	Libs; Africus.
236¼	S. W. by W.	S. O. ¼ O.	¼ di Lib. V. Ponente.	
247½	W. S. W.	O. S. O.	Ponente-Libeccio.	
258¾	W. by S.	O. ¼ S. O.	¼ di Ponente V. Libeccio.	
270	WEST (W.)	OUEST (W.)	PONENTE.	Zephyrus; Favonius.
281¼	W. by N.	O. ¼ N. O.	¼ di Ponente V. Maestro.	
292½	W. N. W.	O. N. O.	Maestro-Ponente.	
303¾	N. W. by W.	N. O. ¼ O.	¼ di Maestro. V. Ponente.	
315	*North-West* (N. W.)	N. O.	*Maestro.*	Corus; Skiron; Argestes.
326¼	N. W. by N.	N. O. ¼ N.	¼ di Maestro V. Tram.	
337½	N. N. W.	N. N. O.	Maestro-Tramontana.	
348¾	N. by W.	N. ¼ N. O.	¼ di Tram. V. Maestro.	
360	NORTH.	NORD.	TRAMONTANA.	Boreas; &c.

If we wish to know on what line one place is situated with respect to the meridian of another, we must first place the globe so that the second place may answer to the pole of the horizon, that is to say, we must *rectify* the globe for that place. This is done by taking its latitude, and elevating the nearest pole to a degree equal to this latitude. The horizon is then, with respect to the globe, in the position which the rational horizon of the place proposed occupies on the earth. The globe being thus rectified, the pivot of the quadrant of altitude is brought over the place in question, and its edge is afterwards made to pass by the first place. The number of degrees and parts of a degree on the horizon, are then counted from the quadrant of altitude to the meridian, either on the north or south side, and we have the measure of the angle formed with the meridian by the arc of the great circle which joins the two places proposed.

Large globes are costly and inconvenient instruments; small ones do not afford sufficient details; it becomes necessary, therefore, to have recourse to *maps*, which give a representation of the globe and its different parts on a plane surface. These representations embrace either the whole earth, or a part of the world, or a single country. In the first case they are called *maps of the world*, and when they have a circular form, *planispheres;* those of the second class are called *general maps;* the others are *special maps*. Among the special maps, some represent a province on a large scale, with all its remarkable places; these again are *chorographic maps*. If the designer has entered into all the details of the nature of the ground, and the direction of roads and rivers, they are *topographical maps*. Custom sometimes confounds these denominations. Geographical maps, properly so called, are also distinguished from those that are appropriated to a particular use; such are *hydrographic charts*, destined for mariners, *mineralogical maps*, and others.

The figure of the earth prevents the possibility of giving a general picture, in which the distances of places, and the relative extent of regions, are preserved in their mutual relations. The earth being a spheroid, its surface cannot coincide rigorously

* The names in this column form the ancient compass of *eight* points. The following intermediate points were recognised by the ancients in the compass containing *twelve* points: — 1. *Between North and East*, Meses, (often Boreas and Aquilo) 30°; Cæsias 60°. — 2. *Between East and South*, Eurus, Vulturnus, 120°; Phœnix, Euronotos 150°. — 3. *Between South and West*, Libonotus, Libophœnix 210°; Libs, Africus 240°. — *Between West and North*, Iapix, Corus, Argestes 300°; Thracias, Cercias 330°.

with a plane; and hence results the impossibility of marking on a map, at the same time, and in their natural relations, the extent of countries, the distances of places, and the similitude of configurations. Geographers are obliged to have recourse to various constructions, to represent, at least in an approximative manner, each of these relations in particular.

These constructions have received the name of *projections;* a name applied in general to drawings, the object of which is to indicate on a plane the dimensions of the sphere, and of the bodies on its surface. They are of two kinds; some are real *perspectives* of the globe, or of the parts of its surface, taken from *different points of view*, and on different planes; the others are only a kind of developments, restrained to approximative laws, and appropriated to the relations which it is wished to preserve in preference.

The projection of the sphere is commonly divided into *orthographic* and *stereographic.*

Orthographic projection is that in which the surface of the sphere is represented on a plane which cuts it through its centre, the eye being placed vertically at an infinite distance from the two hemispheres. The following are the principal laws of this projection:—1*st*, The rays of light proceeding from an infinite distance are parallel. 2*d*, A straight line, perpendicular to the plane of projection, is projected in a single point, which is that in which the line cuts the plane of projection. 3*d*, A straight line which is not perpendicular to the plane of projection, but parallel or oblique to it, is projected by a straight line terminated by perpendiculars drawn from its extremities to the plane of projection. 4*th*, The projection of the line is the greatest possible when it is parallel to the plane of projection. 5*th*, Hence it follows evidently that a straight line parallel to the plane of projection is projected by an equal straight line; but that, if it is oblique to the plane of projection, it is projected by a straight line less than itself. 6*th*, A plane surface, if it be perpendicular to the plane of projection, is projected simply by a straight line; and this straight line is the line in which the given surface intersects the plane of projection. 7*th*, It is hence evident, that the circle whose plane is perpendicular to the plane of projection, and which has its centre in that plane, ought to be projected by the diameter which is its common section with the plane of projection. 8*th*, It is also evident, that an arc of a circle, the extremity of which would answer perpendicularly to the centre of the plane of projection, ought to be projected by a straight line equal to the sine of that arc, and that its complement is projected by a line which is simply the versed sine of that arc. 9*th*, A circle, parallel to the plane of projection, is projected by a circle that is equal to it; and a circle oblique to the plane of projection is projected by an ellipsis.

Stereographic projection is that in which the surface of the sphere is represented on the plane of one of its great circles, the eye being supposed at the pole of that circle. In the stereographic projection, the globe is considered as a transparent solid. The hemisphere represented is that which is opposite to the hemisphere in which the eye is supposed to be. The following are the principal laws of stereographic projection:—1*st*, Every great circle, passing through the centre of the eye, is projected by a straight line. 2*d*, A circle placed perpendicularly opposite the eye, is projected by a circle. 3*d*, A circle placed obliquely with respect to the eye, is projected by another circle, the radius of which increases in the ratio of the obliquity. 4*th*, If a great circle is projected on the plane of another great circle, its centre will be on the line of the measures, that is to say, on the projection of the great circle, which passes through the eye, and which is perpendicular to the circle to be projected, and to the plane of projection. The distance of the centre of the projected circle from the centre of the primitive circle, or circle of projection, is equal to the tangent of its elevation above the primitive plane, or the plane of projection. 5*th*, A small circle will be projected into another circle, the diameter of which (if the circle to be projected surrounds the pole of the primitive circle) will be equal to the sum of the semi-tangents of the greatest and least distance from the pole of the primitive circle, these tangents being taken each in the line of the measures from the same side of the centre of the primitive circle. 6*th*, In the stereographic projection, the angles which the circles make on the surface of the sphere are equal to the angles which the lines of their respective projections make with each other on the plane of projection.

On these principles, methods have been found for tracing maps of the world according to either of the two projections.

Three sorts of stereographic projections are in common use: 1*st*, That on the plane of the equator, called *polar*, because the eye is supposed to be at one of the poles. 2*d*, That on the plane of a meridian, which divides the globe into two *hemispheres*,

one containing America, and the other Europe, Asia, and Africa. 3*d*, That on the plane of the horizon of any place whatever.

In the polar projection, supposing the eye at one of the poles, the plane of the picture will be that of the equator; the meridians will be projected by straight lines, and the circles parallel to the equator by concentric circles.

In the stereographic projection on a meridian, the point of view, always placed in the pole of the hemisphere opposite to that which is to be represented, is on the circumference of the equator; and the projection of this great circle is a straight line perpendicular to the axis of the poles of the earth.

The *horizontal stereographic projection*, is the most interesting application of this method. The rational horizon of any place whatever will serve as a plane of projection; the point of view is the lower pole of that horizon; the meridian that passes through that place is represented by a straight line, and is commonly called the *principal meridian*.

It is sufficient to cast one's eyes on a map of this kind, to perceive that the quadrilaterals comprehended between two meridians and two consecutive parallels, increase in extent in going from the centre to the circumference. This increase results from the oblique direction which the visual rays take, on diverging from an axis perpendicular to the picture, called the *optical axis* It follows, therefore, that the regions placed towards the borders of the hemisphere have a much more considerable extent than if they were at the centre,; and that we are led into error whenever we compare them with those which occupy that part. For example, when the horizon of Paris is taken as the plane of projection, the point of southern Africa appears much broader than on a globe; and in Nova Zembla, the distances, south and north, are represented by spaces much larger than the same distances are in India. This inconvenience, of no consequence to experienced geographers, may convey erroneous ideas to pupils; but the risk would be diminished, if, in teaching, care were taken to explain the properties of stereographic projections, and to place under the view of beginners the polar, equatorial, and horizontal planispheres, the defects of one always disappearing in another.

Besides the orthographic and stereographic projection, there is a third projection in perspective called the *central* projection. It is obtained by placing the point of view at the centre of the sphere, and taking for the plane of the picture a plane which is a tangent to its surface. It is plain that this projection, still more than the stereographic, alters the extent of regions, in proportion as they are removed from the centre of the map. It can never represent an entire hemisphere, because the visual rays, drawn from the circumference which terminates this hemisphere, are infinite, being parallel to the plane of the picture. It may, however, be employed with advantage to represent parts of the globe, the extent of which is not very considerable; for, in this projection, all the places situated on the same great circle, are placed on the map in a straight line; and it is susceptible of a scale, the construction of which is not difficult to find.

Such are the three principal projections of the globe which the rules of perspective admit. We see that none of the planispheres traced after these projections unites all the qualities of a perfect representation of the globe. They necessarily alter the figure of countries, either in the middle or towards the borders of each hemisphere. They do not represent spaces really equal under equal dimensions; and the same takes place for most of the distances. Nor is it possible to obtain, either in the stereographic or orthographic projection, that places situated in a straight line on the globe, that is to say, on the same great circle, should be also represented in the map of the world on a straight line. Finally, the necessary inequality in the projection of spaces does not allow us to find with ease the exact longitude and latitude of a place. Different means of modifying the stereographic projection have in vain been proposed, with a view to remedy these inconveniences.

Among all bodies which can be exactly represented on a plane, the cone and the cylinder are those which approach the nearest in character to the sphere. The cone especially offers this advantage, that a small conical zone hardly differs at all from a spherical zone: hence it is that conical developments afford the best projections of special geographical maps, and, by the help of some modifications, even for maps embracing considerable portions of the globe.

When we merely wish to trace a zone of very little extent in latitude, it is evident that the spherical zone may, without any sensible error, be represented by the development of a cylinder, either inscribed or circumscribed about that zone, and the axis of which coincides with that of the globe. These maps can only serve for very

small parts of the globe; the least defective are those which represent the regions near the equator, because, at a little distance from this circle, the cosines of the latitude do not vary much. D'Anville made use of them in a similar case, but such a case is of very rare occurrence.

Mercator, who had introduced the stereographic projection for maps of the world, considering that mariners do not employ maps to learn the figure of countries, but only to trace exactly, according to its length and direction, the course they have run, and to determine the distance they are from different points of the coasts, with the course they must hold to reach or avoid them, invented, in order to accomplish this object, in 1550, the projection of *reduced maps*, which perfectly satisfies these conditions, and of which Wright, Gregory, Halley, and others, discovered the mathematical theory long after. The meridians in these maps are parallel straight lines, equidistant from one another, and intersected at right angles by the parallels to the equator; but the intervals which separate the latter, increase as we advance towards the poles, in proportion as the degrees of longitude on the globe diminish. Hence it results, that the distances in longitude, measured on each parallel, have the same relation as on the globe, with respect to the distances in corresponding latitudes.

It is of some consequence to attend to the scale of *itinerary distances*, or distance according to the local measures of the country usually laid down upon some prominent part of the map. The principal lineal and itinerary measures made use of in different countries are, the *English* and the *French foot*, each of them divided into 12 inches; the *English yard* of 3 feet; the *English fathom* of 6 feet; the *French mètre*; the *French toise* or *fathom* of 6 French feet; the *English statute mile* of 1760 yards; the *English league* of 3 miles; the *English geographical mile*, 60 to a degree of the equator, which is equal to $69\frac{1}{6}$ (69.1575) English statute miles; the *French mile* of 1000 toises; the old French *post league* equal to 2 French miles; the *French geographical league*, 25 to a degree of the equator; the *French nautical league*, 20 to a degree; the *Spanish league*, $16\frac{2}{3}$ to a degree; the *Italian mile*, $43\frac{2}{3}$ to a degree; the *German geographical mile*, 15 to a degree; the *German great mile*, 12 to a degree; the *Russian werste*, 6 of which are equal to a *Russian geographical mile*, about $17\frac{1}{2}$ to a degree; the *Swedish mile*, $10\frac{2}{5}$ to a degree; the *Danish mile*, $14\frac{4}{5}$ to a degree; and the *Dutch mile*, 19 to a degree. Of the itinerary measures used by the ancients, the great *Alexandrian* or *Egyptian stadium* was equal to 243 English yards; the *Grecian Olympic stadium* to $203\frac{7}{10}$ English yards; and the *Hebrew mile* to 1275 English yards.

Foreign Measures reduced to English denominations.

	English Measures.
French foot	12.789 inches.
Mètre of France*	39.371 inches, or 3.281 feet.
Toise of France	2.13155 yards.
Post league of France	4263 yards, or 2.422 miles.
Geographical league of France	4868.6 yards, or 2.76 miles.
Nautical league of France	6085.8 yards, or 3.457 miles.
Spanish league	7421 yards, or 4.216 miles.
German geographical mile	8114 yards, or 4.61 miles.
Russian werste	1162 yards.
Swedish mile	11703 yards, or 6.649 miles.
Danish mile	8224 yards, or 4.67 miles.
Dutch mile	6406 yards, or 3.638 miles.
French geographical square league	7.65 English square miles.
German geographical square league	21.25 English square miles.

The mathematical elements of a map being determined, it still remains to introduce into it the historical, political, and physical details, of which its extent and object render it susceptible.

* The *foot* and *toise* belong to the old measures of France; the *mètre* is one of the terms of the new system of measures introduced into that country at the period of the Revolution. As these measures are mentioned in some geographical works, it has been thought proper to subjoin the following table of their equivalents in English inches:—

	English Inches.
Millimetre	0.03937
Centimetre	0.39371
Decimètre	3.93710
METRE (Ten-millionth part of the quarter of the terrestrial meridian)	39.37100
Decamètre	393.71000
Hectomètre	3937.10000
Chiliometre	39371.00000
Miriametre	393710.000000

The miriamètre is equal to 6.2138 English miles. The square mètre is equal to 10.766 English square feet.

The objects of common geography require the employment of only a small number of signs, easily understood, and the sense of which was explained by the old geographers, in a legend placed on one of the sides of the map; a custom which ought to be resumed in elementary atlasses. These signs indicate the position of places, and are modified according to the importance of these places, and the rank which they occupy in civil, military, or ecclesiastical government. When we wish to measure distances on a map, we must remark the very small circle or cipher, which is either adjacent to, or inscribed in each of those signs, because it is the central point of this circle which fixes the *geographical position of the place*. A simple line shows the course of small *streams*, and the two banks are indicated separately only when the dimensions of the bed of a *river* can be appreciated by the scale of the map. The *sea shores* are indicated by a very clean line, bordered with hatchings. In geographical maps, these hatchings, exterior with respect to the land, may be conceived to represent the undulations of the sea on the coasts; while, in marine maps, the hatchings, done on the land, exhibit the acclivity of the coast. *Navigable canals* are represented by straight lines joined angularly, which distinguish them sufficiently from natural streams of water, indicated by undulating lines, and from *railways*, marked by lines of short strokes drawn at right angles to the direction of the road. *Common roads* are often marked by two fine parallel strokes, sometimes by simple lines, continuous or punctuated; the latter, however, are most commonly reserved for marking the *limits of states and their provinces*, for which purpose the size and form of the points are varied; and to exhibit in a more striking manner those political divisions, which so often form an absurd contrast with natural limits, the monotony of the engraving is usually relieved by varied colours.

The physical part of a map requires attention to be paid to certain other circumstances. It is desirable to know if a country is covered with plains, or is mountainous, naked or wooded, dry or marshy. Certain conventional signs are usually employed for this purpose; thus the parts more or less strongly shaded, represent slopes more or less steep, on which the light is the more lost in proportion as they approach the vertical position. Geographical maps are less calculated to admit of this improvement, especially with regard to mountains; for the scale of those maps is necessarily too small to admit of expressing on them, in just proportions, the innumerable inequalities of ground, from the highest chains of mountains, to hills of the lowest order. Indeed it is impossible, by any device whatever, to represent, on a single map, all the physical features and superficial inequalities of a country of considerable extent. For a small region, a model may be employed with advantage.

§ 4. *Of the Calendar.*

It may now be proper to give an explanation of the *calendar*, which is a table of the days of the year, arranged so as to assist in the distribution of time, and to point out remarkable days connected with devotion or business. It derives its name from the Latin word *Calendæ*, the name which the Romans gave to the first day in every month, and which signified *called*, because on those days the people were called together by the pontiffs to apprise them of the days of festival that fell within the month. The divisions of time as marked in the calendar are those of *years*, *months*, *weeks*, and *days*.

The year is the period of time which the earth employs in describing its orbit round the sun. As the earth performs this revolution in 365 days 5 hours 49 minutes, or a solar year, it is evident, that at the end of 4 years, each of them supposed to consist of 365 days only, the earth will not have finished its fourth revolution by 24 hours nearly. In order to complete the revolution, every fourth year is reckoned to consist of 366 days, and is named *bis-sextile*, from the circumstance, that at the time of the first correction of the calendar, the 24th of February, or *sixth* of the calends of March, according to the Romans, was doubled. The year of 366 days is called in English *leap-year*. In adding, however, an entire day or 24 hours, called *intercalary*, to the fourth year, the true time of the earth's revolution is exceeded by 11 minutes for each year, or nearly three quarters of an hour for the whole period of 4 years. This excess, in the lapse of 400 years, amounts to 3 days, and is corrected by reckoning the last years of three centuries consecutively as common years, and the last year of the century following as *bis-sextile*. The rule of intercalation stands thus: *Every year of which the number is divisible by four without a remainder, is a leap year, except the centurial years, which are only leap years when divisible by four, after suppressing the two zeros or cyphers.* Thus 1600 was a leap year, but 1700, 1800, and 1900, are common years; 2000 will be a leap year; and so on.

The year, as consisting of 365 or 366 days, called the *civil year*, corresponds with the *Julian year*, which was invented by Julius Cæsar, for the purpose of remedying the defects which in his time existed in the calendar. At the commencement of the use of the Julian year, no account was taken of the excess of 11 minutes every year; and from this omission, the error in the course of fifteen centuries amounted to 10 entire days. To remedy this inconvenience, Gregory XIII. the reigning Pope, ordered 10 days to be at once struck out of the year 1582, and the day following the fourth October of that year was called the fifteenth. He farther contrived the omission of the three intercalary days in 400 years. This new form of the year is called the *Gregorian* or *new style*, in opposition to the former mode of computation, now termed the *old style*. The new style was introduced into England in 1752, and took effect on the day following the second of September, which was accounted the fourteenth, 11 days being thus omitted. At the same time, another important alteration took place: the year, which had hitherto been reckoned to commence on the 25th March, was held to commence, as at present, on the 1st January. The new style prevails throughout Europe, with the exception of Russia, where the old style is still retained.

The year is divided into 12 *months*, consisting of unequal numbers of days. There are three months in each season of the year; but in the calendar the seasons differ, in the dates of their commencement and termination from the astronomical seasons, described in our 34th and 35th pages. The spring months are February, March, and April: the first consists of 28, or, in leap years, 29 days; the second of 31 days, and the last of 30 days. The summer months are, May, 31 days; June, 30 days; July, 31 days. Autumn contains, August, 31 days; September, 30 days; October, 31 days; and the winter season, which includes the last two months of one year, and the month commencing the year following, has November, 30 days; December, 31 days; and January, 31 days.

The division of the year into months is derived from the revolutions of the moon round the earth. The interval that elapses between two successive conjunctions of the sun and moon, or, in other words, between the period of the new moon and its return, is called a *lunation*, the mean length of which is 29 days 12 hours 44 minutes. If the duration of the solar year were equal to that of 12 of these lunations, each month would have the same number of days. This, however, is not the case. The moon, in some years, makes 12 lunations, in others 13; and 19 years must elapse before the conjunctions and other phases return in the same order, and on the same days as formerly. This period of years, which is termed a *lunar cycle*, was registered by the Greeks in letters of gold. The year immediately before the one that commenced the Christian æra, was the first of the cycle; the following year was the second, and so on. From this it may easily be seen, that, in order to find the place in the cycle which any year holds, or its *golden number*, as it is usually called, it is only necessary to add one to the year, and divide by 19; the remainder will be the golden number. Where there is no remainder, the golden number of that year is 19. In this way, if 1838 be divided by 19, the remainder will be 14, which is the golden number for the year 1837; and the new moons throughout this year will be found to happen on the same days as in every other 14th year of the lunar cycle.

The *epact* is the moon's age on the 1st January of any year. Since the duration of the solar year exceeds the length of 12 lunations by nearly 11 days, if the epact of the first year of the lunar cycle be 0, that of the second year will be 11, the third year 22, and the fourth year 33, or rather 3, cutting off 30 days for the additional lunation that the moon has made during the previous three years. On this principle, it is easy to construct a table of the epacts for every year in the lunar cycle, by adding 11 to the epact of the preceding year, and retrenching 30 every time the epact exceeds that number.*

Golden Numbers.	Epacts.	Golden Numbers.	Epacts.	Golden Numbers.	Epacts.
1	0	8	17	15	4
2	11	9	28	16	15
3	22	10	9	17	26
4	3	11	20	18	7
5	14	12	1	19	18
6	25	13	12	1	0
7	6	14	23		

* If the moon's motion were equable in every part of her orbit, it would be an easy matter, from a knowledge of the epact, to calculate the true times of the new and full moons throughout the year. The moon's motion, however, is often accelerated or retarded by the varying attractions of the sun and earth, according to the situation which she occupies in her own orbit, and that of the earth in the ecliptic. These variations are termed *solar* and *lunar anomalies;* and in order to ascertain the true

There is yet another periodical division of time, that of *weeks*. The week is composed of 7 *days*, the Latin names of which are derived from those of the planets. The names of the days in Latin and English are —

Dies Solis.....Sunday.
Dies Lunæ.....Monday.
Dies Martis .....Tuesday.
Dies Mercurii.....Wednesday.
Dies Jovis .....Thursday.
Dies Veneris.....Friday.
Dies Saturni.....Saturday.

The English names, Tuesday, Wednesday, Thursday, and Friday, are of Saxon origin, the days themselves being formerly dedicated to Tiu, Woden, Thor, and Friga, the chief deities of the Pagan Saxons.

Sometimes in calendars, instead of the days of the week, the seven letters A B C D E F G are used. These letters are placed over against the respective days of the month. If the year begin upon a Wednesday, all the Wednesdays throughout the year are designated by the letter A, Thursdays by B, Fridays by C, Saturdays by D, and Sundays by E; the letter which marks the Sundays is called the *dominical* or *Sunday letter*. The dominical letter falls back one place in each of the three common years, because the year has a day more than 52 weeks; and two places in bis-sextile years, which have two dominical letters, the first answering for the months of January and February, and the second for the succeeding months of the year. The 28th and 29th of February have but one dominical letter.

The *civil day* commences at 12 o'clock at midnight, and lasts till the same hour of the following night. Twelve hours are counted from midnight till noon, and twelve from noon to midnight. In this it differs from the *astronomical day*, which is reckoned from noon to noon, the hours in the interval being counted up to twenty-four. In France, and most of the other States of Europe, the hours are reckoned in the same way as in Britain; but in several parts of Italy and Germany, the day is held to commence about sun-set, and the hours are counted on till next sun-set.

In every country where the forms of the episcopal churches are observed, the principal ecclesiastical festival is that of *Easter*. It is one of the feasts called *moveable*, and on the date of its celebration depends the dates of the principal church fasts and festivals throughout the year, with the exception of Christmas, which is always held on the 25th of December. Easter day has been fixed for the *first Sunday after the full moon that happens next after the day of the spring equinox:* consequently it can never happen sooner than the 22d of March, nor later than the 25th of April, dates called *Easter limits*. The principal church feasts depending on Easter, and the times of their celebration, are as follows: —

Septuagesima Sunday, Ash Wednesday..... } is { 9 weeks, 46 days } before Easter.

Rogation Sunday....., Ascension Day or Holy Thursday, Pentecost or Whitsunday....., Trinity Sunday ..... } is { 5 weeks, 40 days, 7 weeks, 8 weeks } after Easter.

In most European countries, there are certain days, the periodical returns of which are fixed for the arrangement of business: these are called *terms*, or, as they are generally four in number, *quarter-days*. The English terms are: —

Lady-day.....25th March. *Michaelmas*.....29th September.
Midsummer ...24th June. *Christmas*.....25th December.

The terms kept by the English courts of law and universities are regulated by the church festivals. *Hiliary Term* is held between the commencement of the year and Easter; *Easter Term*, immediately after Easter-day; *Trinity Term*, after Whitsunday; and *Michaelmas Term*, betwixt Michaelmas and Christmas.

In Scotland, the Terms observed are —

Candlemas.....2d February. *Lammas*..... ...1st August.
Whitsunday.....15th May. *Martinmas*.....11th November.

We shall conclude this chapter with a tabular view of the principal elements of the *solar system*, taken chiefly from Baily's Astronomical Tables, Lond. 1827.

time of the new or full moon, the equations arising out of the anomalies have sometimes to be added, at other times subtracted from mean solar time, as marked by the synodical month of 29 days 12 hours 44 minutes, which is the mean or average length of all the lunations contained in a solar cycle.

TABLE OF THE PRINCIPAL ELEMENTS OF THE SOLAR SYSTEM.

CENTRAL LUMINARY, AND PRIMARY PLANETS.

NAME.	Symbol.	DISTANCE FROM SUN. Mean Distance, or Semi-axis.	DISTANCE FROM SUN. Distance in English miles.	Eccentricity, in Parts of the Semi-axis.	PROPORTIONS. Volume—that of the Earth being Unity.	PROPORTIONS. Mass—that of the Earth being Unity.	Equatorial Diameter—that of the Earth being Unity.	Inclination to the Ecliptic.	Mean Sidereal Revolution, in Mean Solar Days.	Rotation, or Sidereal Day.
Sun	☉	. . . . .	. . . . .	. . . . .	1395324.4000	329630.0000	111.454	. . . . .	. . . . .	$25^d\ 10^h\ 0^m\ 0^s$?
Planets—										
Mercury	☿	0.3870981	36,791,000	0.2055149	. . 0.0565	. 0.1627	0.398	7° 0′ 9″.1	87.9692580	0 24 5 28
Venus	♀	0.7233316	68,748,000	0.0068607	. . 0.8828	. 0.9243	0.975	3 23 28 .5	224.7007869	0 23 21 0
Earth	⊕	1.0000000	95,044,000	0.0167836	. . 1.0000	. 1.0000	1.000	. . . .	365.2563612	0 23 51 4
Mars	♂	1.5236923	144,818,000	0.0933070	. . 0.1386	. 0.1294	0.517	1 51 6 .2	686.9796458	0 24 39 21
Vesta	⚶	2.3678700	225,052,000	0.0891300	. . . . .	. . . .	. .	7 8 9 .0	1325.7431000	Not known.
Juno	⚵	2.6690090	253,667,000	0.2578480	. . . . .	. . . .	. .	13 4 9 .7	1592.6608000	
Ceres	⚳	2.7672450	263,011,000	0.0784390	. . . . .	. . . .	. .	10 37 26 .2	1681.3931000	
Pallas	⚴	2.7728860	263,547,000	0.2416480	. . . . .	. . . .	. .	34 34 55 .0	1686.5388000	
Jupiter	♃	5.2027760	494,494,000	0.0481621	. 1280.9000	. 308.9400	10.860	1 18 51 .3	4332.5848212	0 9 56 0
Saturn	♄	9.5387861	906,607,000	0.0561505	. 974.7800	. 93.2710	9.987	2 29 35 .7	10759.2198174	0 10 16 0
Uranus	♅	19.1823900	1,823,178,000	0.0466794	. 81.2600	. 16.9000	4.332	0 46 28 .4	30686.8208296	

SATELLITES.

NAME.	DISTANCE FROM PRIMARY. Mean Distance, in Equatorial Radii of the Primary.	DISTANCE FROM PRIMARY. Eccentricity.	Mass—that of the Primary being Unity.	Diameter, in Miles.	Inclination of Orbit to that of the Primary	Sidereal Revolution.
Earth's Satellite, the Moon, [☽]	59.98217500 (about 237,900 miles)	0.0548442	0.0125172	2160	5° 8′ 47″.9	$27^d\ 7^h\ 43^m\ 11^s.5$
Jupiter's Satellites—						
1st	6.04853	Insensible.	0.0000173	2508	3 5 30 0	1 18 28 0.0
2d	9.62347	Insensible.	0.0000232	2068	Variable.	3 13 14 0.0
3d	15.35024	Small and variable.	0.0000885	3377	Variable.	7 3 43 0.0
4th	26.99835	Small and variable.	0.0000427	2890	2 58 48 .0	16 16 32 0.0
Saturn's Satellites—						
1st	3.35100	Orbits nearly circular.	. . . . .	. . . .	Orbits of the six interior very nearly in the plane of the Ring; that of the 7th Satellite nearer to coincidence with the Ecliptic.	0 22 38 0.0
2d	4.30000	Orbits nearly circular.	. . . . .	. . . .	Orbits of the six interior very nearly in the plane of the Ring; that of the 7th Satellite nearer to coincidence with the Ecliptic.	1 8 53 0.0
3d	5.28400	Orbits nearly circular.	. . . . .	. . . .	Orbits of the six interior very nearly in the plane of the Ring; that of the 7th Satellite nearer to coincidence with the Ecliptic.	1 21 18 0.0
4th	6.81900	Orbits nearly circular.	. . . . .	. . . .	Orbits of the six interior very nearly in the plane of the Ring; that of the 7th Satellite nearer to coincidence with the Ecliptic.	2 17 45 0.0
5th	9.52400	Orbits nearly circular.	. . . . .	. . . .	Orbits of the six interior very nearly in the plane of the Ring; that of the 7th Satellite nearer to coincidence with the Ecliptic.	4 12 25 0.0
6th	22.08100	Orbits nearly circular.	. . . . .	. . . .	Orbits of the six interior very nearly in the plane of the Ring; that of the 7th Satellite nearer to coincidence with the Ecliptic.	15 22 41 0.0
7th	64.35900	Orbits nearly circular.	. . . . .	. . . .	Orbits of the six interior very nearly in the plane of the Ring; that of the 7th Satellite nearer to coincidence with the Ecliptic.	79 7 55 0.0
Satellites of Uranus—						
1st?	13.12090	Orbits nearly circular.	. . . . .	. . . .	Inclined about 78° 58′ to the Ecliptic. Motion of Satellites retrograde.	5 21 25 0.0
2d	17.02290	Orbits nearly circular.	. . . . .	. . . .	Inclined about 78° 58′ to the Ecliptic. Motion of Satellites retrograde.	8 16 56 5.0
3d?	19.84500	Orbits nearly circular.	. . . . .	. . . .	Inclined about 78° 58′ to the Ecliptic. Motion of Satellites retrograde.	10 23 4 0.0
4th	22.75290	Orbits nearly circular.	. . . . .	. . . .	Inclined about 78° 58′ to the Ecliptic. Motion of Satellites retrograde.	13 11 8 59.0
5th?	45.50700	Orbits nearly circular.	. . . . .	. . . .	Inclined about 78° 58′ to the Ecliptic. Motion of Satellites retrograde.	38 1 48 0.0
6th?	91.00800	Orbits nearly circular.	. . . . .	. . . .	Inclined about 78° 58′ to the Ecliptic. Motion of Satellites retrograde.	107 16 16 40.0

THE MEASURE OF EACH DEGREE OF THREE DIFFERENT DENOMINATIONS, IN EACH PARALLEL OF LATITUDE, FROM THE EQUATOR TO EITHER POLE, IN ENGLISH FATHOMS.

By Lieutenant-Colonel W. Lambton. — Compression $= \frac{1}{304}$.

Paral. of Lat.	*Meridional in Fathoms.*	*Perpendicular in Fathoms.*	*Longitudinal in Fathoms.*	*Paral. of Lat.*	*Meridional in Fathoms.*	*Perpendicular in Fathoms.*	*Longitudinal in Fathoms.*	*Paral. of Lat.*	*Meridional in Fathoms.*	*Perpendicular in Fathoms.*	*Longitudinal in Fathoms.*
0°	60458 . 64	60857 . 05	60857 . 05	30°	60607 . 4	60906 . 9	52746 . 9	60°	60906 . 7	61007 . 0	30503 . 5
1	60458 . 8	60857 . 1	60847 . 8	31	60616 . 5	60910 . 0	52210 . 0	61	60915 . 7	61010 . 0	29578 . 2
2	60459 . 8	60857 . 3	60820 . 2	32	60625 . 8	60913 . 1	51657 . 2	62	60924 . 5	61012 . 9	28643 . 8
3	60460 . 3	60857 . 6	60774 . 2	33	60635 . 2	60916 . 2	51088 . 6	63	60933 . 1	61015 . 8	27700 . 6
4	60461 . 5	60858 . 0	60709 . 8	34	60644 . 8	60919 . 4	50504 . 5	64	60941 . 4	61018 . 6	26748 . 8
5	60463 . 2	60858 . 6	60627 . 0	35	60654 . 5	60922 . 7	49904 . 9	65	60949 . 6	61021 . 3	25788 . 7
6	60465 . 1	60859 . 2	60525 . 8	36	60664 . 4	60926 . 0	49290 . 2	66	60957 . 5	61024 . 0	24820 . 7
7	60467 . 5	60860 . 0	60406 . 4	37	60674 . 3	60929 . 3	48660 . 3	67	60965 . 3	61026 . 6	23845 . 0
8	60470 . 1	60860 . 9	60268 . 6	38	60684 . 4	60932 . 7	48015 . 6	68	60972 . 7	61029 . 0	22861 . 9
9	60473 . 2	60861 . 9	60112 . 6	39	60694 . 6	60936 . 1	47355 . 2	69	60979 . 8	61031 . 4	21871 . 7
10	60476 . 5	60863 . 0	59938 . 4	40	60704 . 8	60939 . 5	46682 . 4	70	60986 . 7	61033 . 7	20874 . 8
11	60480 . 3	60861 . 3	59746 . 1	41	60715 . 1	60943 . 0	45994 . 2	71	60993 . 4	61035 . 9	19871 . 4
12	60484 . 3	60865 . 7	59535 . 6	42	60725 . 4	60946 . 4	45292 . 0	72	60999 . 7	61038 . 0	18861 . 8
13	60488 . 7	60867 . 1	59307 . 1	43	60735 . 8	60949 . 9	41576 . 0	73	61005 . 7	61040 . 1	17846 . 4
14	60493 . 4	60868 . 7	59060 . 6	44	60746 . 3	60953 . 4	43846 . 2	74	61011 . 5	61042 . 0	16825 . 4
15	60498 . 4	60870 . 4	58796 . 3	45	60756 . 7	60956 . 9	43103 . 0	75	61016 . 8	61043 . 8	15799 . 3
16	60503 . 8	60872 . 2	58514 . 1	46	60767 . 2	60960 . 4	42346 . 6	76	61022 . 0	61045 . 5	14768 . 2
17	60509 . 4	60874 . 1	58214 . 2	47	60777 . 6	60963 . 9	41577 . 3	77	61026 . 7	61047 . 1	13732 . 6
18	60515 . 4	60876 . 1	57896 . 6	48	60788 . 0	60967 . 4	40795 . 1	78	61031 . 2	61048 . 5	12692 . 7
19	60521 . 6	60878 . 2	57561 . 4	49	60798 . 4	60970 . 8	40000 . 5	79	61035 . 3	61049 . 9	11648 . 9
20	60528 . 2	60880 . 4	57208 . 8	50	60808 . 7	60974 . 3	39193 . 5	80	61039 . 1	61051 . 2	10601 . 4
21	60535 . 0	60882 . 7	56838 . 9	51	60819 . 0	60977 . 7	38374 . 5	81	61042 . 5	61052 . 3	9550 . 7
22	60542 . 0	60885 . 0	56451 . 6	52	60829 . 2	60981 . 1	37543 . 7	82	61045 . 6	61053 . 4	8497 . 0
23	60549 . 4	60887 . 5	56047 . 2	53	60839 . 3	60984 . 5	36701 . 4	83	61048 . 3	61054 . 3	7440 . 6
24	60557 . 0	60890 . 0	55625 . 8	54	60849 . 3	60987 . 9	35847 . 8	84	61050 . 7	61055 . 1	6382 . 0
25	60564 . 8	60892 . 7	55187 . 5	55	60859 . 3	60991 . 2	34983 . 1	85	61052 . 7	61055 . 7	5321 . 4
26	60572 . 9	60895 . 4	54732 . 4	56	60869 . 0	60994 . 4	34107 . 6	86	61054 . 3	61056 . 3	4259 . 1
27	60581 . 2	60898 . 2	54260 . 6	57	60878 . 7	60997 . 6	33221 . 7	87	61055 . 6	61056 . 7	3195 . 5
28	60589 . 7	60901 . 0	53772 . 4	58	60888 . 2	61000 . 8	32325 . 5	88	61056 . 5	61057 . 0	2130 . 9
29	60598 . 4	60903 . 0	53267 . 8	59	60897 . 5	61004 . 0	31419 . 4	89	61057 . 1	61057 . 2	1065 . 6
30	60607 . 4	60906 . 9	52746 . 9	60	60906 . 6	61007 . 0	30503 . 5	90	61057 . 25	61057 . 25	0000 0

CHAPTER III.

PHYSICAL GEOGRAPHY, IN RELATION TO THE INORGANIC PART OF THE GLOBE.

THE physical charaeteristies of our planet, which comprehend the most difficult, and unquestionably the most intercsting of all the phenomena to which geography refers—must be studied under two grand and well discriminated divisions, to be treated under the present and following chapters. *The first division relates to the* INORGANIC *matter of the globe; and the sceond, to its* ORGANIZED *or living families.*

The full investigation of these two heads of inquiry constitutes the subject-matter and aim of many distinct sciences or branches of science; but in this place, it is necessary to refer *only to the more general laws or relations by whieh those seiences seem to be connected with the* ENTIRE EARTH. The line of demarcation, however, between that part of any subject which rightly falls to be treated as physical geography, and that which is more properly left to be wrought up into a separate science, is not a clear or distinct one; and its waving course generally varies with the discretion or capriee of the inquirer.

In the study of the *inorganic* matter of the globe, to which the present chapter refers, we have also certain obvious fundamental divisions, which every clear description must follow: and others are suggested by a practical knowledge of the kind of treatment proper for the subject. The following are the heads or divisions, whieh, without farther preliminary, we mean at some length to discuss: —

I. The Phenomena of the Land.

II. The Phenomena of Ocean, Rivers, &c.; and the relations of the Aqueous with the Solid portion of the Globe.

III. The Constitution and motions of the Atmosphere; Physical Climate; and Meteorological Phenomena.

§ 1. *The Phenomena of the Land.*

A GLANCE over any globe or map of the world shows, that the LAND is distributed in larger and smaller portions amid a vast expanse of occan. The smaller portions are named *Islands;* while the larger divisions are termed *Continents.* Frequently one portion of land is almost detached from the rest, being only joined with it by a very narrow neck, termed an *Isthmus*, and the portion nearly detached, if comparatively small, is named a *Peninsula*, or almost-island. When the land juts into the sea, and breaks the line of coast by the extrusion of a sharp point, the point, or extremity of the part which juts out, is called a *Cape*, or *Promontory.*—The land may be considered under two points of view, viz. its *geographieal distribution*, and its *profiles.*

1. One half of the earth is almost entirely covered with water, while the other half contains mueh less water than land. To exhibit this, adjust an ordinary geographical globe, so that New Zealand may occupy the highest or zenith point. The hemisphere above the horizon will present only a few islands, some promontories, and some narrow lines of coast, amid an immense sea; while the inferior hemisphere is for the most part land. Naturalists, at one time, fancied the necessity of a great southern continent, as a counterbalance to the mass of land situated in the other hemisphere; but the voyages of Cook put an end to such conjectures. Up to the 70th degree of south latitude, that enterprising navigator saw one vast ocean, interspersed with masses of floating ice, and a few trifling islands which had formerly been mistaken for promontories; so that there remains only a space of about five or six thousand square leagues in which there can be any land; and the whole of this mass would very little alter the proportion between the hemispheres. But, the truth is, the portion of the land now elevated above the level of the sea, is so small when compared with the convexity of the globe, that the existing inequalities in its distribution can produce no sensible effect upon the earth's equilibrium; and it is possible besides, that the sea towards the south pole may be less deep than in the northern hemisphere. This would be the case, were the measurements of La-Caille confirmed, by which he thought he had proved a greater flattening or depression of the terrestrial spheroid towards its southern extremity, inasmuch as the ocean, in virtue of the obvious tendency of water to establish a level,

would in that case spread itself over the surface of all the southern land. The following Table exhibits the proportion of known land to the entire area of different latitudinal *zones* of the earth's surface, together with the superficial extent of the land in each:—

LAND — *Northern Hemisphere.*			LAND — *Southern Hemisphere.*		
	Proportion.	*Surface in Square Miles.*		*Proportion.*	*Surface in Square Miles.*
Arctic Zone, . .	0.400	3,252,589	Antarctic Zone, .	0.000	
Temperate Zone,	0.559	28,531,631	Temperate Zone,	0.075	3,828,036
Torrid Zone, . .	0.297	11,628,440	Torrid Zone, . .	0.312	12,215,735
Total, . .	0.441	43,412,660	Total, . .	0.163	16,043,771

2. The land has two profiles, the *horizontal* and the *vertical.*

A. A few general remarks, which, in so far as we yet see, are quite unconnected, exhaust our knowledge of what is distinguishing in the *horizontal profile.* If the northern and southern hemispheres are contrasted in regard to the quantities of land they contain, the eastern and western present differences equally striking, in respect of the *shape* or *direction* of their continents. Divide the globe into two hemispheres, by lines passing through the poles, — one including Europe, Asia, and Africa, or the *Old Continent,* and the other, North and South America, or the *New Continent;* and it will be noticed, that while, in the former case, the land stretches out chiefly in the direction of the circles of latitude, so that its line of greatest length is nearly parallel to the equator, the direction of the Americas is perfectly opposite, or at right angles to this; the longest line stretching from pole towards pole. To this circumstance the difference of the climates of the two great continents may be chiefly attributed, but the difference is further increased in consequence of the New Continent approaching much nearer the north pole than the Old. The minuter features of the horizontal profiles, are in many respects no less contrasted. For instance, there is a much greater proportion of irregularities, or indentations, in the coasts, in the Old World, than in the New, — the former appearing open in almost every part to the advances of the sea, while one side of America presents no irregularity of consequence, except at California, and the other has also immense tracks perfectly unbroken. There seems but one characteristic in which in this point of view the opposite continents agree. The promontories or headlands in both, point to the south; and, with a few exceptions, this is the direction of all large peninsulas. South America, California, Alyaska, Greenland, Nova Scotia, Florida, Scandinavia, Italy, Greece, the Krimea, Arabia, India, Corea, Kamtshatka, and Africa, are instances of this. The same peculiarity prevails among the small peninsulas of some limited districts, such as the south coast of Greece, or the west coast of Scotland. Nothing is known which can account for a uniformity so unexpected and curious; but doubtless it is closely connected with the proximate causes of the existing distribution of land and water.

B. The *vertical profile* of the earth offers a great variety of aspects, and gives rise to much speculation. Even a first glance over any considerable territory, insular or continental, exhibits an exceedingly uneven and undulating surface, and convinces us that there is something singular and convulsive in this part of the earth's constitution.

a. The more uniform or unbroken parts of the landscape, even should their surface be slightly undulating, are named *plains;* and although, in general, systems of plains are of limited extent, being usually disturbed after short intervals by huge elevations, there are districts where the flat country stretches over a considerable space. Around the southern shores of the Baltic, and in the countries near the German Ocean to the north of the Rhine, we have an extensive system of plains. This is also the distinguishing feature of Russia, south of the Waldai; and it is even possible to draw a line from London to Moscow, which would not perceptibly vary from a dead level. Similar illustrations may be found in Africa, America, and New Holland—not connected with each other, however, by any common principle or law. From the low flats now spoken of, we must carefully distinguish *plateaus, table-lands,* or *upland plains,* which are extensive masses of land, raised far above the level of the sea; and which redescend to that level sometimes abruptly, and by rugged sides, and in other cases by long and gentle declivities. A plateau may have, and often has, upon its wide surface, mountains, plains, and valleys; and some of them are so flat, that the waters which fall upon them cannot escape to flow down their sides, so that these have also their systems of

rivers, lakes, and inland seas. Several instances of such masses exist in Europe, as in Croatia and Carniola; but they are of trifling dimensions, compared with the vast magnitude of similar formations in Tartary, Persia, among the Andes, and in Central Africa. We cannot connect known plateaus into any general or *terrestrial* system; but they form the most important features of separate districts and continents, appearing as their most ancient masses of land—the *nuclei* around whose sides the additional soil has through ages accumulated, and the continents grown into their existing form. On this ground the illustrious geographer *Ritter*, has recently conceived the plan of subdividing the surface of the earth, chiefly according to the elevated masses characterizing its different regions; with the description of which and their various declivities he unites views of the histories of the people inhabiting them; uniting together, so that they throw light on each other, their topographical, historical, and statistical relations. The novelty of the plan, and the immense erudition displayed in *Ritter's* work, place it among the small number of those, which constitute an epoch in the science of which they treat.

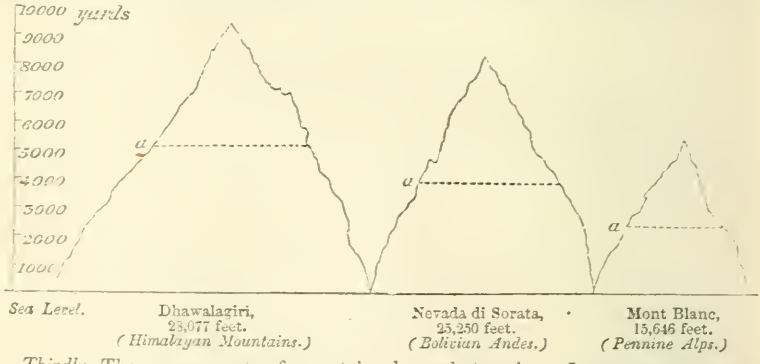
b. But the most remarkable features of the vertical profile of our planet are exhibited in the phenomenon of *mountains*. These large and abrupt elevations are scattered over all the surface of our globe; and, in every degree of development, they exhibit striking and picturesque varieties. The loftiest peaks generally consist of naked rock, the outline varying with the nature of the rock. At one time the mountain shoots up in the form of enormous crystals, whose sharp angles appear supported by each other; while in other instances, vast masses are crowned with rounded summits, rising into the air with quiet majesty. In some cases, too, the entire side of a mountain is one profound and abrupt steep, laying open, as it were, the hidden interior of the mass. These appearances are distinguished by the appellations,—*needles*, *peaks*, *teeth*, *horns*, *domes*, *breches* or *breaches*. Mountains of less elevation, or of the *second class*, are often equally picturesque. Chiefly constituted of strata or layers of rock variously inclined, but in all inclinations preserving a certain regularity, they seldom present those crystallized and needle-points; but sometimes we observe them rising around us by regular steps or gradations—a majestic amphitheatre; and in certain instances, the mass presents a surprisingly regular outline, like that truncated cone at the Cape of Good Hope, the *Table Mountain*, which appears like a gigantic altar. In some few cases, these mountains also exhibit fantastic outlines, but usually they are undulated and furrowed. Beneath mountains of the second rank, are *hills*, more or less lofty, of no great apparent elevation on any side, and with gentle declivities. Furrowed by streams of water, these often slope gradually away, and lose themselves in the plains; but sometimes their sides are precipitous, producing on a small scale the picturesque effect of higher elevations. The *pics*, or upper parts of mountains produced by volcanic agency, have an aspect peculiar to themselves. Their conical or pyramidal masses, rising like a cone or *sugar loaf*, are distinguished by regularity, even where they have been broken across by accidental causes. Basaltic mountains are also very striking. Their sides display ranges and piles of immense pillars, or causeways, which seem the production of giants.

It is difficult to fix on the *best* classification of the various phenomena connected with mountains. Perhaps, we may include the whole, by considering, *first*, those general appearances which arise from the mere fact of the existence of irregular masses, elevated above the general surface: *secondly*, the elevation or comparative altitudes of these masses; *thirdly*, their mode of arrangement: and *fourthly*, their sections, or internal constitution, along with the conclusions authorised by it.

First, then, it is clear that every mountain must have a *declivity*, or manner of descending to the plains. At least one general law is established on this subject; *every principal chain has one side very steep, and on the other a very gradual slope.* The Alps, for instance, are much more rapid in their descent on the Italian side, than on that of Switzerland; the Scadinavian masses are steepest towards the west and northwest; the Pyrenees towards the south; and so likewise are the Sierra-Morena, and the Alpuxarras; while the mountains of the Asturias are the reverse. Mount Atlas and Mount Libanus present their bold and craggy declivities towards the Mediterranean; and the two mountain chains that border the northern and the southern coasts of Asia-minor, present very abrupt faces towards the Black Sea and the Mediterranean, while their opposite, or inland sides merge more gently into high table-lands. Lastly, the Western Ghauts, on which the table-land of the Deccan rests, have precipitous declivities directly towards the west, and long and gentle slopes towards the east. These facts likewise show, that the attempts, not unfrequently made, to constitute a *terrestrial* system of abrupt sides, and opposite gentle

declivities, or to refer such contrasts to *universal*, instead of unknown *local* causes, are not supported by a minute review of the globe. When mountains lie together in groups, we have a special order of declivities, which have *acclivities* on both sides, and are termed *valleys*. These are *transverse* or *longitudinal*, according to their position in regard of the chains connecting them, — the former being at right angles to the principal chain, the latter in the same direction with it. The outlines of valleys are exceedingly various. Sometimes they have, on opposite sides, salient and re-entering points, so entirely corresponding, that one can scarcely help imagining that their sides, formerly united, have been torn asunder by some great convulsion; and in other cases, they are large, rounded, and gently swelling, as in Bohemia and Cashmere, seeming like the basins of ancient lakes, drained by the breaking down of a barrier. Valleys greatly vary in degree of acclivity; but the more remarkable phenomena connected with them appear when they are nearly closed up by transverse mountains, and have access to the larger world by only a narrow gorge, termed a *pass*, or *defile*. These secluded valleys often contained, in former times, independent nations, and the French still term such gorges "*Les portes des nations.*" The passes of Caucasus, the Caspian passes, those of Issus and Thermopylæ, and that of Skiœrdal, which unites Norway and Sweden, are of this class. But the grandest instances of such defiles are among the Andes, where cliffs rise above either side of the traveller four or five thousand feet.

Secondly, The absolute and relative heights of mountains is a point of great moment in physical geography; for elevation determines climate, and a single mountain side, therefore, exhibits the habitats of vegetables and animals as influenced by almost all the variations of climate incident to the globe. Great confusion unfortunately prevails in this portion of geography, partly because of the confused nomenclatures of observers, but chiefly because accurate measurements, trigonometrical or barometrical, have been taken only in Europe, in a small number of localities in Asia, and in a still smaller in America, Africa, and Oceanica. Tables of the heights of the leading ranges, as far as ascertained, will be found in the subsequent parts of this volume. The subjoined woodcut, however, will be interesting, as illustrative of the culminating points and relative heights of the chains of the Himalaya, the Andes, and the Alps. The dotted lines *a a a*, mark the mean heights of the chains, which may be stated in round numbers as follows: — Himalayas, 15,600 feet; Andes, 11,800 feet; and Alps, 7,700 feet.



Thirdly, The arrangements of mountains demand attention. In rare cases separate mountains are grouped together, forming a mere group of elevations, not externally connected; but in general, the bases of a series of neighbouring mountains *run into each other*, constituting a *chain*. We seldom find one solitary or single chain. In most groups or collections of mountains, numbers of chains are associated, sometimes in the manner of a central chain with secondary lines branching off from it; in other places, as a collection of chains, of which no one can be ranked as the principal; and in a few instances, (witness the Cordilleras of America) as long connected chains running parallel to each other for thousands of miles, in one constant direction. On no point in physical geography have more attempts been made to systematize too hastily than on this. It was conceived at one time, that the direction of the leading chain of mountains is always along the line of greatest length in the continent and district to which they belong, but this supposition does not accord with accurate knowledge of the facts. Attempts to frame from external aspects, extensive systems of chains, have also failed. The most

plausible of these attempts is unquestionably that which aimed at connecting into one chain, notwithstanding local irregularities, almost all the ranges of mountains in our planet. The map of Asia undoubtedly exhibits a close succession of greater or less altitudes, from Behring's Straits across the table-land of Mongolia, and, with some interruption, through Persia and Arabia, to the shores of the Red Sea. On the other coast of that sea, the mountains of Abyssinia appear to continue the series, which proceeds through the mountains of Lupata, or the back-bone of the world, to the Table Mountain at the Cape; while across Behring's Straits we find the beginning of that continuous chain of elevations which stretches to Cape Horn. Our planet is thus almost encircled by a vast ring or belt of mountains, which led Malte-Brun, in a moment of active fancy, to venture the idea, that the earth might at one time have been begirt by a ring like that of Saturn, and which, having fallen in, now survives only in its ruins!*

In now turning to consider the *composition or interior sections* of mountains, we are attracted by that remarkable class which appears to intimate something concerning the hidden interior of the earth, *volcanoes*. The general features of that most frightful and majestic of all phenomena, a volcanic eruption, are well known. Violent movements, which often shake the earth to a considerable distance, prolonged moanings, or subterranean thunder, and the manifest agitation of the mountain, first announce the invisible war of the elements. The smoke issuing from the crater increases, thickens, and ascends as a black column. The summit of this column, yielding to its own weight, sinks down, becomes rounded, and appears, in awful picturesqueness, like the head of a pine tree, having the lower part for its trunk. At other times, the scene opens with more brilliancy. A stream of fire, piercing through a mass of clouds, is seen like a pillar of flame, resting upon the ground, and threatening to set the sky in a blaze. The environing smoke sometimes conceals it for a moment, and lightnings appear to flash from the midst of it. On a sudden, the brilliant cascade seems to fall back into the crater, and its fearful splendour is succeeded by darkness. Still the action continues within the abyss of the mountain: ashes, dross, and burning stones, are thrown out in diverging lines, like the sparks of fireworks — enormous fragments of rock are heaved against the skies, and torrents of water are often thrown out with impetuosity, and roll hissing over the heated rocks. This, however, is still only preliminary. A fluid burning mass now rises from the bottom of the crater, similar to metal when in fusion. This overflows, runs down the sides of the mountain, and descends to its base. There it sometimes stops, but generally it widens, and advances like an impetuous river, devastating whatever it meets with, and transforming in a moment miles of flourishing fields into a burning flame. Equal ravages may ensue, although the liquid matter, called *lava*, does not issue exactly from the top of the mountain. It is sometimes too weighty and compact to be elevated to the summit, in which case it occasions ruptures in the side of the mountain, through which the fiery torrent gushes forth.

The energy of this shattering volcanic force, however, is not to be measured by its mere superficial effects. It has been known to alter the entire profile of the district within which it acted. It has distorted plains, raised mountains where none stood before, and in some cases mountains have disappeared during its paroxysms and the action of the earthquakes† accompanying it. Mount Jorullo, in Mexico, was elevated in one night of fearful convulsion. We have many records of the rise of islands, or mountains thrown up by submarine volcanoes; and Sir T. S. Raffles has given us an account of the sudden disappearance or swallowing up of a large mountain in the island of Sumbawa. For a condensed view of every authenticated fact of this description, the reader is referred to Mr. Lyell's classical work on geology.

Not only is the volcanic power one of mighty energy, but it has also a wide diffusion, and is distinctly the exponent of some great physical law connected with the general structure of the earth. *Tierra del Fuego*, *Peru*, *Chili*, and *New Granada*, are filled with volcanoes. Beyond the isthmus of Panama, we find many burning summits among the mountains of *Nicaragua*, *Guatemala*, and especially of *Mexico*; nor is it

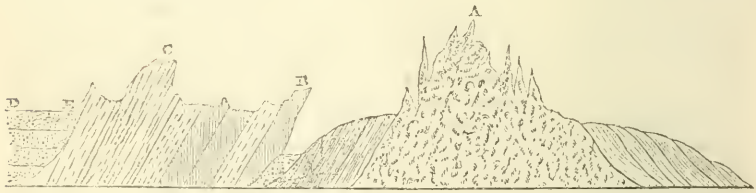
* It may be right to advert to another speculation concerning mountain-chains. Groups of islands like the Kuriles, the Aleutian, and the Great and Little Antilles, being manifestly the peaks of submarine groups; some generalizers have attempted to resolve all islands into such, and to trace through these few and far-between indications, the chains of mountains rising from the bottom of the sea. This is the object of the geographical theory of *Buache*, which, however visionary, has originated several works of high desert, which have facilitated and advanced the study of geography. Among these are the early publications of *Balbi*, and the *Introduction à la Geographie*, by *Lacroix*, where this geometrician has developed a mode of dividing the whole earth, according to the different *basins* which compose it.

† Earthquakes, in fact, are simply actions of the volcanic or convulsive energy, where it does not find a *vent*. Their effects are tremendous: sometimes overwhelming cities, opening ravines, closing up valleys, and breaking asunder the solid earth, so that the sea may come in and divide what formerly was united.

doubtful, after the statements of Cook, La Perouse, and Malespina, that there are likewise many on the *north-west coast* of *America*. Then come the volcanoes of *Alashka*, and the *Aleutian islands*, which are very numerous, and seem to point to *Kamtshatka*, where alone there are five, two of which are violent ones. Japan has at least ten, and the island of Formosa two or three. Passing farther south, the volcanic sphere widens, embracing the entire *Philippines*, the *Marian Isles*, the *Moluccas*, *Java*, *Sumatra*, *Queen Charlotte's Isles*, the *New Hebrides*, the *Friendly*, the *Society*, and the *Sandwich Isles*. The number of volcanoes in these islands it were tedious to enumerate. *Java* alone contains thirty-eight! In the Indian ocean we have the volcano of *Barren Island*—the volcano of the south island, or *Amsterdam*, in the group of St. Paul and Amsterdam, and the formidable one in the isle of *Bourbon*. In the middle of Asia, amid the deserts of Tartary, there are the mountains of *Tourfan* and *Bish-Balikh*. The *Cape Verd* islands contain the volcano of the island *Fogo*. Portuguese authors speak of others in *Guinea*, *Congo*, and *Monomotapa*. In Europe, a great volcanic line, or rather *zone*, traverses *Greece*, *Italy*, *Germany*, and *France;* although in the two latter countries its activity has long ceased. Many revolutions have been caused by such action in the Grecian Archipelago, and new islands have been produced by sub-marine explosions. Farther west, the summits of *Etna* rise into view, which have flowed for upwards of 3000 years, within the records of history. The *Lipari* islands are all volcanic, and probably owe their existence to this cause. *Vesuvius*, and the greater but extinct volcano near *Rocca Fina*, the *Solfatara*, the *Pontian* islands, the old volcanoes near *Padua*, *Verona*, and *Vicenza;* some others, also extinct, in *Dalmatia* and *Hungary*, *Kawberg* in *Bohemia*, *Transberg* near *Gottingen*, the *seven mountains of Bonn*, the celebrated district of *Auvergne* in central France, and the now equally silent peaks around *Olot* in Catalonia,—all these illustrate the extent of volcanic action. In the northern ocean, also, *Iceland* presents its *Hecla*, its *Kotlouguia*, and six other volcanoes, whose breathings agitate even the lowest depths of the ocean; and in the middle of the Atlantic, we have the *Azores* and *Canaries*, the peak of *Teneriffe* itself rising to an elevation of 12,000 feet. These guide us to the *Antilles*, which are almost all of volcanic constitution, and where there are still active mountains in *Saint Vincent*, *Saint Lucia*, and *Guadaloupe*.

We have thus under our view an agent of extensive operation and vast power, especially if it was the same that acted with still greater force in the prior ages of our planet, shattering its crust or surface, and uprearing masses of mountains. It remains to be seen whether the constitution, or sections of these mountains, will authorise such an explanation.

For the most part, the *nuclei* of great chains consist of rocks of chrystallized or massive structure, not formed of *layers;* and where the chief rocks of chains are *stratified*, they uniformly point to some central line or *axis*, where chrystalline rocks prevail, and toward which, the stratified masses incline or *dip* from opposite sides. A section will most briefly explain this: —



The mass or axis which the portion below A represents, is composed of chrystalline rocks; and the rocks around either side of that mass, when of abrupt and truncated form, at the points B and C, exhibit the possibility of secondary chains, or of chains turning towards the central axis; these are called stratified, or *sedimentary*, i. e. they have been deposited by water, according to a principle we shall explain afterwards, and laid down in a *horizontal position*. The phenomenon, then, receives its most probable solution in the hypothesis that the mass A, molten by fire, had been protruded through the horizontal rocks with a force which caused them to alter their original position, and assume their inclination, and that the protruding rocks, being molten or used, had chrystallized in cooling. This explanation of the inequalities of the earth's crust is now universally adopted; and it is well borne out by the fact, that if we arrange in a regular series the *lavas* of volcanoes at present in a state of activity, the products of volcanoes now extinct, the trap rocks, which are lavas that seem to have cooled under great pressure, and those anciently chrystallised masses to which we

have adverted, it will be found that there cannot be detected any break in that series, as the modern lava seems to merge gradually into the older chrystallized formations.

Adopting this theory, it may he asked, — if these mountain masses were protruded by internal volcanic or other forceful agency, can we ascertain the *relative epochs of their protrusion*, speaking of epochs or periods of time, in this case, not in terms of solar or lunar years, but in that order of numbers in which we compute the distances of the fixed stars? A living and acute French geologist, *Elie de Beaumont*, first brought into full view the principles by which the relative ages of protrusions or disturbances can be estimated; and he has already made extensive researches with reference to the age of particular chains. If, as is undoubted, the stratified rocks were properly and originally horizontal, it is clear that all stratifications not horizontal have been disturbed or upheaved, while those remaining in a horizontal position give evidence that no disturbance or upheaving has occurred in their neighbourhood since the time of their deposition. In the previous wood-cut, for instance, the rocks at D, being horizontal, have not been disturbed, and must have been deposited *since* the central mass A protruded itself, and elevated the inclined masses B and C; so that the epoch of the protrusion of A is manifestly included between the period of the deposition of the last of the series of elevated rocks at E, and that of the deposition of the horizontal strata at D. Now, the several stratified formations may be taken as contemporaneous over a large extent of country; and a means is thus in our hands of judging when the different mountains were raised. De Beaumont has joined with this irrefragable theory an hypothesis by no means established, but not to be rejected or overlooked, as it rests on very plausible grounds. He supposes that lines of mountains *parallel to each other* were elevated during the same epoch. Further and minute observation alone can confirm or invalidate this. The following is De Beaumont's idea of the scale of the ages of our mountains, beginning with the oldest:—

1. The system of Westmoreland, and those of the Eifel, the Hundsruck, and Nassau, at the foot of which the carboniferous masses of Belgium and Sarrebruck were deposited.
2. The elevations of the Ballons in Vosges, and the Boeage in Calvados.
3. The mountains of the north of England.
4. The mountains of the Low Countries and South Wales.
5. The system on the Rhine.
6. The system of the south-west coast of Britanny, and of La Vendee, of Morvan, of the Böhmerwaldgebirge, and of the Thuringerwald.
7. The mountains of Pilas, and Côte d'Or, and of the Erzgebirge.
8. The system of Monte Viso.
9. The Pyreneo-Apennine system.
10. The mountains of Corsica and Sardinia.
11. The Western Alps.
12. The principal chain of the Alps.

When we touch upon the remote or internal *cause* of these great disturbances, we are still lost in speculation. Perhaps geologists err, some in imagining causes of too local or confined a nature, and others by rushing into theories respecting the *central heat*, &c., which known phenomena are not sufficiently large to authorize. It should be kept in mind by all, that the protruding or elevating power is not confined to our planet. Its effects are visible in the Moon, in Venus, and every other body with whose physical constitution we are acquainted. The phenomenon then is, in so far, an astronomical one. It is connected with the physical development and the history of every known orb in the heavens.—The names and positions of the volcanic rocks will be found in the Table at the close of next section, which presents a synoptical view of all the formations constituting the crust of the globe.

§ 2. *Phenomena of the Water which covers part of the Surface of the Globe, and its Action upon the Land.*

THIS section is naturally divided into the two parts indicated by its title, — the first, treating of the general phenomena of the ocean, rivers, &c.; and the second, of those changes which they occasion, or have occasioned, to the land with which they are connected.

I.—The phenomena of Hydrography are very various, but we shall probably exhaust them by considering — 1*st*, The physical and chemical peculiarities of the existing masses of water; 2*d*, The forms, mutual relations, and geographical distribution of its different parts; and 3*d*, The motion to which they are subject.

1. We find water in each of those three physical conditions which bodies can assume — *vaporous* in the atmosphere, *liquid* in the rivers and seas, and *solid*, as snow and ice. Its habitudes in the vaporous form will be detailed in a succeeding chapter. In its solid form it is very extensively known over the globe. The inhabitants of the temperate zones observe it frozen during their winter. In the circumpolar zones, where great cold always prevails, large masses of ice constitute a permanent feature in the landscape; and even in the torrid regions, the summits of the mountains often reach beyond the lower limit of perpetual snow, and are covered by a white crown. The limit referred to is caused by its elevation above the ground, and is higher or lower, according as the average temperature of the low lands is high or low. Within the tropics, for instance, water in its liquid form will exist at an elevation at which snow would prevail in the colder zones. In all countries, when the climate perceptibly varies with the seasons, there are thus necessarily two inferior limits of congelation—the lower one for winter, and the higher for summer; and the interval between them is the remarkable region of *glaciers*. In the hotter weather, the snows collected in the lower zone during winter are gently thawed, and when winter returns, refrozen into the consistency of ice, instead of flaky snow; and this alternation, proceeding through long ages, at length collects those large fields of ice, which, on breaking down through their own weight or accidental causes, often tear up the sides of the lower mountains, and devastate whole territories. The size of the glaciers varies with their locality. The Alps and the Pyrenees exhibit vast extents of such icy fields. Humboldt found few of them in America; but they exist in the mountains of Central Asia. Although the ravages occasioned by such masses are very great, they are yet by no means without their use; perhaps their action upon the whole is conservative and beneficial. The cold, which converts the greater quantity of water falling on a large tract of mountain into snow and ice, seals up a perpetual source of torrents, which in rainy seasons would destroy the countries in the neighbourhood. The glaciers hold this supply in suspension, acting as great fountains; it flows from them in summer, in free but gentle abundance; and in seasons of drought or violent heat, they augment the necessary and delicious supply.

The waters of the globe vary greatly in chemical character, or in composition. The general division is into fresh water, salt water, and mineral water.

The water of marshes, of lakes, and rivers, water found in pits, water resulting from the melting of snow, and spring water, for the most part, is all *fresh*, or somewhat similar to distilled water. There are also many subterranean reservoirs of fresh water, for otherwise we cannot account for the phenomena of springs and fountains. Such jets often rise from the bottom of the sea, in so great abundance that the saltness of the surrounding ocean is materially lessened by them. In the Gulf of Spezia, for instance, there is a powerful jet of this description rising in a liquid column. Similar fountains furnished the inhabitants of Aradus (near Baharein, in the Persian Gulf) with their ordinary drink; and on the south coast of Cuba, south-west of Barabano, and two or three nautical miles from the shore, fresh-water jets arise through the sea in such force that boats cannot approach them without hazard.

The great mass of the water, however, is *salt*. The entire ocean is so; and it is from it that, by a process of evaporation, we obtain the greater part of our common culinary salt. Physical inquirers have commonly considered the sea to be saltest under the equator; but Humboldt has recently deduced from good experiments the following results: —

Proportion of salt between	0°	and 14°	Lat.	= 0.0374
.....	15°	— 25°	—	= 0.0394
.....	30°	— 44°	—	= 0.0386
.....	50°	— 60°	—	= 0.0372

In general, the saltness of the sea diminishes near the mouths of rivers, and in the neighbourhood of the polar snows. It is also less in inland seas which receive many rivers, such as the Baltic and the Black Seas; and must likewise vary according to climate, storms, temperature, and the direction of currents, the time of tides, and after heavy rains. We have yet nothing beyond hypothesis in reference to the origin of this quality of sea water. We simply know the fact, that different salts are constituents of the terraqueous system, a large quantity of which has come into contact with the waters of the ocean, and been dissolved by them.

Water is found in many localities united with various other substances; in which case it generally receives the name of *mineral* water. *Sulphate of magnesia* is not an uncommon element; and it is this salt which constitutes the chief characteristic of the ecle-

brated waters of Seidlitz and Epsom. The steppes of Siberia north-east of the Caspian contain such saline lakes, forming a sort of chain from the Kuma and lower Volga, as far as the Yenesei; and similar sheets abound among the plains of Hungary. *Sulphur* is also a frequent ingredient in some mineral waters; others hold in solution *arseniates* and *mercurial* salts, but these are chiefly buried in caverns. Water is also united with other metallic compounds; and being in other cases charged with extremely minute atoms of *silex*, which enter the pores of wood and other substances, and substitute, for the elements of the original bodies, firm chrystalline particles, it is said to *petrify* bodies thrown into it. This petrifying power is remarkable in *Lough Neagh* in Ireland. Such streams sometimes deposit their silex upon the floor of their beds, forming there a crust of solid silex, which in various instances has accumulated into a considerable rock. We remark, in conclusion, the existence of *inflammable* waters, or rather waters from whose surfaces flames dart out, although the liquid is not hot. Sometimes the pools referred to contain inflammable gases, disengaged from masses of iron, zinc, and tin, dissolved by sulphuric and muriatic acids, such as the fountains of Poretta Nuova, or the brook near Bergerac, which may be kindled by a lighted straw; at other times, they are mixed with bitumens, especially naphtha and petroleum, which float upon their surface, and burn there — for instance the water of Baku and other places in Persia.

Three physical characters of the mass of waters of the globe remain to be considered, namely, their *colour*, *phosphorescence*, and *temperature*.

The general *colour* of the sea, a blue inclining to green, is not universal; for other shades, depending apparently upon local causes, prevail in detached portions of it. The higher part of the Mediterranean, for instance, has sometimes a purple hue; in the gulf of Guinea the sea is white, and amid the Maldive islands black. The most interesting, and perhaps the only definite investigations in reference to this subject, are those of Ehrenberg on the red colour of the Red Sea. He derives it from the prevalence of a species of *oscillatoria*, a production half animal half vegetable; and it is probably to the presence of other species of *oscillatoria* that the waters near the mouth of the La Plata, as well as those of several other localities, owe the same reddish tinge. The discovery of Ehrenberg has been confirmed by De Candolle, who recently demonstrated, that the water which in the spring of 1825 reddened the waters of the lake of Morat almost to the hue of blood, belonged to the development of an animalcule, figured and described by this learned botanist, under the name of *oscillatoria rubescens*.

The *phosphorescence* of the ocean is a magnificent and imposing spectacle. Sometimes a vessel cleaving the waves appears to trace a long line of fire, and every stroke of the oar produces jets and flashes of vivid or lambent flame. In other cases, thousands of stars seem to float and gambol on the watery surface, multiply, reunite, and form a vast field of light; and again, the scene becomes more tumultuous, luminous waves rising up, rolling and breaking in a brilliant foam. It is probable that this splendid phenomenon, which varies with the state of the atmosphere, the direction of currents and winds, the latitude, and other circumstances, is chiefly owing to microscopic animals, which are most numerous in the equatorial seas, to the development of electricity, and to the decomposition of plants, fishes, and invertebrated animals, which the immense ocean and its branches nourish in inconceivable numbers.

Scarcely anything is known concerning the *temperature* of the ocean as depending upon its depth: this part of the subject is still the prey of cosmogonical hypotheses. A considerable number of experiments, however, justify us in stating the following laws in regard to the heat of the superior beds of the sea. These experiments are very important in relation to the theory of physical climate:—1. The temperature of the ocean is generally lower at mid-day than that of the atmosphere, noticed in the shade. 2. It is always higher at midnight. 3. In the morning and the evening, these two temperatures are usually in accordance. 4. The mean of a given number of observations of the temperatures of the surface of the water and the atmosphere, taken at six in the morning, at noon, six in the evening, and midnight, is constantly higher in the case of the sea, in whatever latitude the observations are made. 5. The mean temperature of the waters of the ocean, at their surface and at some distance from any continent, is thus higher than that of the atmosphere with which they are in contact. 6. The sea, over a bank, is always colder than where it is deeper; and the difference is greater, the higher the bank. This curious diminution of temperature might be very useful to the navigator; it might forewarn him of unseen danger, and prove his best sounding line.

2. The form, mutual relation, and geographical distribution of the different portions of the aqueous portion of the globe, offer subject of varied remark.

The most general division of the water is two-fold, namely, *rivers* or *streams*, and *sheets* of water. The former, according to their size, are classed into *rivers*, *brooks*, *rills*, &c. The latter consist of *lakes* or *inland seas*, and of the great terrestrial ocean, with its branches and arms. *Lakes* are of four kinds, the first class consisting of very small collections of water, which neither receive nor give out any stream; a second class, fed by springs, which receive no river, but from which one issues; a third and very numerous class, such as the great lakes of Canada, lakes *Ladoga*, *Onega*, *Constance*, *Baikal*, &c. which both receive and feed rivers; and a fourth, which receive rivers, but from which none issues. The largest and most celebrated of this fourth class is the *Caspian Sea;* Asia contains several others, and the great lake *Tchad* in Africa is one of the same kind. Such essentially belong to the interior of large continents; and although one or two occupy singular hollows or depressions below the level of the ocean, they are generally placed on elevated plains or plateaus, which have no sensible declivity. The great Ocean is divided into partial oceans, distinguished according to their localities. When it sends out large arms, particularly into the interior of the continents, they are termed seas, as, for example, the *Mediterranean* and *Black Seas;* when the arms are smaller, they receive almost indiscriminately the names of *bays* or *gulfs*, as in the instances of the *Gulf of Genoa*, the *Bay of Biscay*, the *Gulf of Guinea*. If the bay or gulf is united with the main sea, or if two seas, or portions of the same sea are joined together by a narrow neck, that neck is termed a *strait*.

The *relations* between rivers and large collections of water, are close and striking. *They feed each other*. A process of evaporation is constantly raising masses of fresh water into the air in the form of vapour, from the surfaces of oceans and lakes, which redescend upon the earth in the form of rain, and feed those innumerable streams, which flow towards the ocean and replace its waste. This process of reciprocal supply never ceases. The machinery of circulation is constantly in action, and the harmony of its operations must be admitted to be one of the most beneficent and beautiful provisions of nature.

The *geographical distribution* of rivers is mainly determined by the forms of the continents. Wherever we have long declivities, or where the central massive plateau does not descend rapidly to the level of the sea, we naturally expect considerable rivers, and *vice versa*. The special geography of the different continents will explain the nature of their respective plateaus, and therefore the causes of the lengths, &c. of their rivers; but the following table, extracted from the article "Physical Geography," in the Encyclopedia Britannica, has a universal character, and naturally finds its place here. It must be observed, that the *basin* of a river, or its hydrographical region, signifies the whole of the declivities from which the brooks and rivulets which feed it descend.

TABLE OF THE BASINS, LENGTHS, &c. OF RIVERS.

	Rivers.	*Length.*	*Area of Basin in English Miles.*	*Proportional Size of Basin.*	*Proportional Quantity of Water discharged per annum.*
Europe	Thames,	1	5,500	1	1
	Rhine,	4½	70,000	12¾	13
	Loire,	4	48,000	8¾	10
	Po,	2¼	27,000	5	6
	Elbe,	4½	50.000	9	8
	Vistula,	4¼	76,000	13½	12
	Danube,	9¾	310,000	56	65
	Dneiper,	7¾	200,000	36	36
	Don,	7½	205,000	37	38
	Wolga,	14	520,000	94	80
Asia	Euphrates,	9¾	230,000	42	60
	Indus,	11½	400,000	72½	133
	Ganges,	10	420,000	76	148
	Yang-tse-kiang,	21½	760,000	138	258
	Amour,	16	900,000	164	166
	Lena,	13½	960,000	174	125
	Oby,	15	1,300,000	236	179
Africa	Nile,	18½	500,000	90	250
America	St. Lawrence,	22½	600,000	109	112
	Mississippi,	19	1,368,000	249	338
	Rio de la Plata,	13½	1,240,000	225	490
	Amazon (not including Araguay,)	22¾	2,177,000	395	1280

No geographical theory has connected existing Lakes into a system. They originate in local causes incapable of being generalized.—The Ocean occupies what at present is

the lowest part of the terraqueous globe: its divisions and chief branches are given in the following table:—

- **A. The great South-Eastern Basin or Sea.**
  1. The *Antarctic Ocean*, confined between the South Pole and the parallel of Lat. 66° 32′.
  2. The *Southern Ocean* or *Sea*, bounded by the Antarctic Ocean and a line joining Cape Horn, the Cape of Good Hope, the southern point of New Zealand, and Cape Horn.
  3. The *Indian Ocean*, lying between Africa on the west, and the peninsula of Malacca, the isles of Sumatra, Java, and New Holland on the east, and bounded by Persia and Hindostan on the north. — Branches: The Red Sea. The Persian Gulf. The Bay of Bengal, &c.
  4. The *Pacific Ocean*, divided by the Equator into North and South, and inclosed between America on the east, and Asia, the islands of Sumatra, Java, and New Holland on the west. — Branches: Sea of China. Sea of Japan. Sea of Okhotsk, &c.
- **B. The *Western Basin* or *Sea*.**
  1. The *Atlantic Ocean*, beginning in a line from Cape Horn to the Cape of Good Hope, and terminated in the north by the Arctic Circle. — Branches: The Mediterranean Sea. The German Ocean. The Baltic, with its Gulfs. Baffin's Bay. Hudson's Bay. The Gulf of Mexico. The Carribbean Sea.
  2. The *Arctic Ocean*, surrounding the North Pole, and bounded by the Arctic Circle and the northern shores of the two continents. — Branches: The White Sea. The Sea of Kara. The Gulf of Obi, &c.

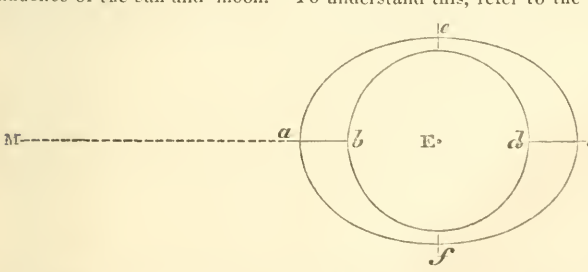
3. The *motions* of the waters of the globe are now to be considered.

The motion of *rivers* originates in the weight of water, or in its tendency to descend an inclined plane; but when a first impulse is communicated, the simple pressure of the superior portion of the mass will make it flow onwards, after its bed has lost all inclination: the Amazon, for instance, as well as many of our largest streams, have declivities scarcely perceptible, that of the great American river being only 1-27th of an inch in 1000 feet. The velocity of the current depends also upon its mass being in some manner proportional to it; which accounts for one river often receiving another without perceptibly enlarging its bed. The most striking phenomenon in the course of rivers, is the formation of *cataracts*, when the mass of water falls over a precipice or ledge of rock, and reaches suddenly a much lower level, a phenomenon of which the Falls of Niagara are a most magnificent and celebrated example. *Periodical floodings* or *overflowings* are common to all rivers whose sources and hydrographical basins are placed under the torrid zone, or in its neighbourhood; they arise from the regular and abundant rains which fall almost without interruption in the equatorial regions, now on one side, and now on the other, of the equinoctial line.*

Three distinct moving causes produce different species of motions in the *sea*.

The waters being in contact with the atmosphere, and capable of yielding to the slightest force, are agitated more or less by every agitation in the air. The zephyr wrinkles their surface; a high wind, produces perceptible undulations, which under a breeze increase into waves; these, during a storm or hurricane, rise into foaming billows, and form long and lofty ridges when their development is not impeded, and the winds blow in the same direction for a considerable length of time. The height of waves, &c., the manner in which they expand and break, their velocity and their extent, depend upon the depth of the sea and the size of the basin, as well as the force of the wind.

The first or impelling cause of the *tides* is astronomical, and owing to the attractive influence of the sun and moon. To understand this, refer to the subjoined diagram.



Suppose that the solid earth, represented by the circle E, were surrounded by a regular sphere of water—in other words, that the earth were a regular & uniform sphere. If no external body or in-

* Another phenomenon, arising out of the relation of rivers to the rocks or mineralogy of their beds, might have been remarked here, viz. the loss or disappearance of rivers, total or temporary. In the former case, they sink through a porous soil, and pass into subterranean caverns, whose issues are so remote that we cannot trace them; and in the latter, they reappear at a lower but not very distant level, after flowing along the bottom of the porous soil. With this latter phenomenon may be classed the formation of artificial bridges, caverns, &c.; the water having cleared away an inferior soft stratum of rock. The great rock bridge of Virginia is a splendid instance of the operation referred to.

fluence operated on this system, it is clear that the waters would, in obedience to the law of gravitation, arrange themselves regularly and uniformly around the earth, forming a coating or bed everywhere of the same depth. Let now an external body, M, be called into being, and observe the necessary effect of this change of circumstances. The attraction of M, in accordance with the law of gravity, varies with its distance from the point attracted, so that the particle of water immediately under it, will be more attracted by it than the particle of land at the *bottom* of the water: these two particles will thus be separated or drawn away from each other to a certain extent, *i. e.* the watery sphere, instead of being uniform as before, will bulge out as in the diagram at *a b*, beneath the body M. A little consideration will show that the same bulging out must take place at *d c*, opposite to M; for in this case *d* the particle of the land is more attracted by M than the water which lies above it; *i. e.* the tie between these two particles is diminished in power, and, as in the former case, they must separate to a certain extent. No such diversity of attraction, however, operates at *e* and *f;* and the consequence is inevitable, that the watery sphere, in order to be reduced to a state of rest or equilibrium, must assume the foregoing *ellipsoid* form, instead of the spherical. Suppose, in addition, that the solid globe E revolved daily on its axis, and it will be clear that any mark or pole, such as is represented in the diagram, will be twice a-day in shallow water, and twice a-day in deep water; in other words, the tides thus arising must ebb and flow twice in 24 hours. The body which acts in this manner on our waters with most intensity is the moon; but the sun has also a very perceptible effect. When the two influences are in unison, *i. e.* at full or new moon, we have the greatest disturbance, or *spring tides;* when they are in opposition, or at the moon's quadratures, we have the least disturbance, or *neap tides.* Had the earth as above supposed, been a regular solid of revolution, without heights or hollows, and surrounded by an uniform bed of water, the phenomena of the tides would have been wholly *astronomical*, depending upon the fact of the revolution around the earth of two aqueous spheroids — one belonging to the attraction of the moon, the other to that of the sun — of magnitudes, determinable by the tables of these two celestial bodies, and acting sometimes in unison, but generally in various degrees of opposition. But the irregularities of the earth, and the consequent geographical distribution of the waters, greatly involve the general problem, and necessitate extensive investigations. This *physical* problem of the tides, indeed, is one of the most complex and difficult in the entire range of science; and we have hitherto arrived only at a very few of the facts and laws belonging to it. It is evident, in the first place, that a sea or ocean of comparatively small extent — the Mediterranean, for instance—can have very little perceptible tide, inasmuch as the luminaries in question will attract all its particles with nearly equal energy; and if the sea stretches, like the *Caspian* or the *Baltic*, from north to south, there will be no perceptible tide whatever. Thus also, in the narrowest parts of the Atlantic, there should, astronomically speaking, be comparatively but small tides, while, in the Pacific, the phenomenon ought to be exhibited in its fullest development: and general rules of this nature might be laid down with some accuracy, were *the several seas not connected by channels.* In consequence, however, of all the great seas and oceans forming, as we have seen, only one sheet of water variously distributed, the ebb and flow of the waters in each depend not on its own tide, but are the result of the combination of that tide with currents mingling with it from the tides of other oceans. We are thus thrown upon the problems of the mode of the distribution and the rate of such tidal currents in all the seas — a problem depending upon the varying inequalities of the bed of the sea, the position of its coasts, their inclination under water, the size and direction of the strait or channel which connects it with other seas, and, in especial cases, upon the winds and currents which are not tidal. So much do these local and accidental circumstances affect the astronomical tidal wave, that while around the islands in the Pacific Ocean, where that wave is most completely brought out, it rises only to the height of one or two feet, the *derived* wave often accumulates in narrow channels, possessing little natural tide, by beating against obstructions, and being heaped up to the elevations of thirty, fifty, and even seventy feet! Mr. Whewell, and several other inquirers, have lately made a valuable contribution of empirical materials to the treatment of this hydrodynamical problem, by endeavouring to trace *co-tidal lines*, or lines which mark the contemporaneous position of the various points of the great wave which carries high water from shore to shore. The subject is not susceptible, in the meantime, of other than experimental treatment.

Besides the tides, the ocean has *currents* not owing to astronomical causes, whose complicacy is extreme, and whose origin, although connected with the *rotation* and *varying temperature* of the earth, we are yet far from minutely knowing. The chief

collections of facts concerning these currents are in the volumes of M. Rossel and Captain Sabine, from which we glean a few particulars.

First, A great current sets from the poles, north and south, towards the equator, and preserves its direction for a long space. It is owing to this current that floating masses of ice are frequently found in the temperate seas, drifted from the frozen regions; and the agency is so strong, that it blocks up the northern bays of Iceland with similar masses, from the depth of 500 feet. The failure of Captain Parry's celebrated attempt to reach the north pole, by means of boat-sledges and reindeer, is known to have been owing to the current referred to. *Secondly*, As we approach the equator, the northerly current seems to change gradually into that great western one, well known to navigators; which again, on striking against the varied coasts of the continent opposed to it, breaks into minor branches of all manner of divergence. We shall trace it in the two great seas of the earth. In the *Atlantic*, the westward tendency of the water is felt at the Canaries; and it is so regular within a large space, that to go from these islands to the eastern coast of America is much less hazardous than a short coasting voyage in Great Britain. From the Canaries, the flood of water reaches the coast of Caraccas in thirteen months; whence it enters the Gulf of Mexico, and rushes round it, in its strait parts, as the Bahama Channel, with great velocity. After continuing ten months in this circuit, it spends other two in skirting the coast of North America. Striking against the bank of Newfoundland, it now turns eastward, and ten or twelve months afterwards, we find it re-entering into itself on the coast of Africa. In all, it occupies about thirty-five months in performing a magnificent circuit of upwards of 10,000 miles. A current in the same direction, occupies the equatorial districts of the *Pacific*. Departing from the coast of Peru, it sweeps on without interruption until it is broken by that immense archipelago of islands, low banks, submarine mountains, and long coasts, against which it strikes, and which greatly modify its subsequent direction. Divided by New Holland, the southern part of it, after rushing through Bass's Strait, seems to preserve its western direction; for, mingling with other western branches, it rushes upon Madagascar, from which it glides off to the coasts of Natal, and, passing the Cape, unites with the general motions of the Atlantic. As might be suspected, from the configuration of the land, the northern division is by no means so regular. It finds its main outlet through Torres' Strait; but on meeting Sumatra, it separates into two. The first part flows along the east coast of Sumatra towards the north, as far as the bottom of the bay of Bengal; the other passes through the Straits of Sunda, and perhaps it is a portion of the same branch that is found so influential in the China sea, and which has also been detected in considerable energy in the sea of Japan, and the channel of Tartary.*

II. We have now reached a very interesting portion of physical geography — the study of the *changes which the action of water is producing and has produced upon the solid parts of the globe*. They are two-fold: the changes which have supervened within comparatively recent dates, and the changes whose records are found in the geological annals of the world.

1. The influences of the *sea* are of opposite kinds: it tends in some instances to increase the existing quantity of land, and in others to diminish it.† When the coast is low, and the bottom sandy, the waves push the sand upon the bank. At every reflux, this new sand is in so far dried; and as the prevalent wind is *from* the sea, it is generally blown inwards, and accumulates into those small sand-hills which we call downs. According to their relation to the botany of the region, these downs are destructive or innocuous. Sometimes, as on the coasts of New Holland, they are covered with plants, whose roots stretch through the sand, and bind it into a durable although increasing mass; but in other places, where there are no such plants, and no description of cement, the wind, which raises new sand from the sea, carries a portion of the downs already formed into the interior, where it slowly elevates the land, covering fields and dwellings, and converting the face of nature into a barren desert. In the Bay of Biscay, these sand-hills have overwhelmed a great number of villages mentioned in the records of the middle ages; and in the single Department of Landes, they have been threatening ten others, since the year 1802, with inevitable destruction. In Brittany and Portugal, there are many such examples; and we have a striking case of the same

* Currents arising in the ocean from so many and often opposite causes, frequently meet and conflict. When conflicting currents have nearly an equal force, they constitute a *whirlpool*: — such is the *Charybdis* in the straits of Messina, and the *Mahlström* among the Loffoden islands.

† It was the local changes produced by these two actions, coupled with phenomena, attending that slow elevation of continents (Sweden) noticed near the close of last chapter, which formerly inclined respectable philosophers to assume the untenable position of changes in the level of the sea.

sort in Scotland, at the mouth of the Findhorn. The chief influence of the sea, however, is to diminish the mass of land — to encroach upon its coast. Instances of this operation are seen near every lofty coast. In usual cases, the constant and regular play of the waters hollows the lower parts of the cliffs *(gutta cavit lapidem)*, which in time fall down by their own weight; and their debris, in the form of rocks, boulder, and mud, is strewn through the neighbouring ocean. In storms, this destructive agency is fearfully augmented: whole masses of coast being dashed away, new islands formed by the violent separation of parts of the solid land, and the rocks which cannot be removed broken into pinnacles. The following table, taken chiefly from the work of M. Hoff, presents a chronological series of the most important occurrences of this violent nature since the eighth century. It will give an idea of the amount of the present form of the earth which may be attributed to the cause referred to.

Year.	
800.	The sea carries off a large quantity of the soil of Heligoland.
800—900.	Tempests change the coasts of Brittany: valleys and villages are swallowed up.
800—950.	Violent storms agitate the lagunes of Venice. The isles of Ammiano and Costanziaco disappear.
1044—1309.	Terrible irruptions of the Baltic on the coasts of Pomerania, which commit great ravages, and give rise to the popular rumour of the disappearance of the fabulous city of Vineta.
1106.	Old Malamocca, a considerable town near Venice engulfed by the sea.
1218.	A great inundation formed the gulf of Jahde, so named from the small river which watered the fertile country destroyed by this catastrophe.
1219, 1220, 1221, 1246, 1251.	Terrible storms form the island of Wieringen on the coast of Holland.
1277, 1278, 1280, 1287.	Inundations ingulf the fertile country of Reiderland, destroy the town of Torum, 50 towns, villages, and monasteries, and form the Dollart; the Tiam and the Eche, which watered this little country, disappear.
1282.	Violent tempests break the isthmus which united Holland with Friesland, and form the Zuiderzee.
1240.	An irruption considerably changes the western coast of Schleswig; many fertile territories are swallowed up, and the arm of the sea which separated the island of Nordstrand from the continent is greatly enlarged.
1300, 1500, 1649.	Three-fourths of Heligoland are swept away.
1300.	Ciparum in Istria destroyed.
1303.	A great part of Rugen ingulfed, and many villages on the coasts of Pomerania.
1337.	An inundation carries off fourteen villages in the isle of Cadsand, in Zealand.
1421.	An inundation covers the Bergseweld, destroys twenty-two villages, and forms the Biesbosch, which extends from Gertruidenberg to the isle of Dordrecht.
1475.	Land near the mouth of the Humber swept away, and several villages destroyed.
1510.	The Baltic forms the mouth of the Frisch-Haff.
1530—1532.	The sea ingulfs the town of Kortgene in the island of North Beveland; and in the latter year carries away the eastern portion of South Beveland, with several villages, and the towns of Borselen and Remerswalde.
1570.	A violent storm destroys half of the village of Scheveningen, north-west of the Hague.
1625.	The sea detaches part of the peninsula of Dars, in Swedish Pomerania, and forms of it the island of Zingst.
1634.	An irruption submerges the whole island of Nordstrand, 1358 houses, churches, and towns are destroyed; 6408 persons and 50,000 head of cattle perish. There now remain, of this once fertile and flourishing island, the three islets named Pelworm, Nordstrand, and Lütze-moor.
1726.	A violent storm changes the salt marsh of Araya, in the province of Cumana, into a gulf several leagues wide.
1770—1785.	Currents and tempests hollow out a channel between the high and the low parts of Heligoland; and transform into two islets, this island, so extensive before the eighth century.
1784.	A violent storm, according to M. Hoff, forms the lake of Aboukir in Lower Egypt.
1791—1793.	New irruptions destroy the dikes, and carry off other parts of the already so reduced island of Nordstrand.
1803.	The sea sweeps away the last remains of the Priory of Crail in Fifeshire.*

But violently though the sea thus acts upon the earth, it is to the action of *rivers* that we trace by far the largest amount of the changes induced by the influence of water upon the land of the globe; and this not through the instrumentality of the occasional torrents, which hollow out the ravines of highland districts, and scatter the boulders and confused debris of the mountains upon the low lands, but through their slow and persistent power to convey downwards the mud and fine particles of their beds, and to deposit them in the stiller places of their onward course. In the highest parts of the earth, there is a constant progressive decomposition or mouldering of the most solid rocks, by meteorological causes. The moisture which enters every crevice of a rock ere long separates the two parts still farther, partly by its expansion on being frozen; and in short, what we may term the dissolving power of the air, reduces by degrees the hardest stones to fine particles, which the rains wash down and deliver to the currents on the sides of the mountain, which on their part carry them to the rivers, and these to the lower territories. Every river carries down in this way a very large quantity of what previously was the substance of the higher

* With such sudden and terrible actions of the sea, may be classed the ruin occasioned by the bursting of lakes, and the sudden outpouring of their waters upon the low ground. Instances are on record of accidents of this description, fully as dreadful in their consequences as most irruptions of the ocean.

country, and mingles it with the remains of such animals, vegetables, &c. as may happen to have fallen into its stream; so that we have, through the agency of rivers, a general abrading or levelling power which fills up the valleys and lower parts of the earth, by matter torn from its more elevated parts.

The important question is, how this mud and various debris is deposited, or what is the precise nature of the new formation or new soil thus constituted in the low lands? There are three distinct cases worthy of especial remark. *First*, As the power of water to transport matter heavier than itself depends upon the velocity of its current, it is clear, that as the current grows less impetuous, the massier portion of the debris — stones, &c. — will be deposited in the bed of the river itself; and if during its course it spreads out in any locality into an inland lake, or almost still sheet of water, the finer particles it has borne along will be deposited there. In the case, for instance, of the Rhone, which expands into the Lake of Geneva, probably the larger fragments of the upper Alps are left behind it long before it reaches the basin of the lake; but it will have carried downwards, as far as that basin, a vast mass of finer matter, of which soil or new rock might ultimately be composed, and which will there be deposited, in consequence of the marked diminution in the power of the stream. The lake of Geneva must then be gradually filling up, and in consequence of layer above layer of fine matter being regularly stratified upon its bed by the action of the Rhone. That lake is now the receptacle of the finer debris of the Alpine countries of the Valais. It is the record of what species of matter they at present contain; but in the course of ages it will as it fills up cease to be so; and the Rhone, having no longer room to diffuse itself in that region, will pass along with unabated velocity, and carry that debris to some still lower level. This phenomenon is worthy of especial attention. We see in it how a confined bed of stratified matter may be formed within an inland country; how it may contain the annals or geological character of a large district during the epoch of its formation; and finally, how deposition may be interrupted, and the seat of the deposit transferred to another, and perhaps very distant locality. Neither is the phenomenon peculiar; it is repeated wherever we have lakes into which rivers flow. The lakes of Upper Canada are slowly filling up, like the lake of Geneva. *Secondly*, Where the river nowhere expands into a lake, the finer or chief part of the debris will be carried to its mouth, and deposited where the tide meets it with sufficient force to cause a degree of stagnation: sometimes this is beyond the mouth of the river, where we have then a bank or *bar*. At other times, it is considerably up the river, where banks arise, and ultimately divide the single stream into several minor branches, forming small islands; but for the most part it is at the mouth, where new land gradually appears above the water-surface, and the river seems to push the sea backwards. This latter is the origin of deltas, like those of the Nile, the Ganges, the Rhone, and the Po; and offers an explanation of the incontestible fact, that many cities, which, at epochs well known in history, had flourishing harbours, are now several leagues inland, and ruined in some cases by their change of situation. Venice herself, once the empress of the sea, perceives her lagoons shrinking, and, in memorial of the mutability of things, herself likely to be left as a decaying wreck upon the shore. *Lastly*, These two operations exhibit low grounds, in many parts of the globe, in the act of being filled up by stratified deposits, of local peculiarities; but the currents of the ocean, by combining with the effect of rivers, can produce results, similarly stratified, on a more gigantic scale. Operations of this kind, which are not uncommon, are finely and adequately exemplified on the coasts of North America. At this moment, all the debris brought down by the mighty flood of the Mississippi is delivered into the gulf stream which sweeps the Gulf of Mexico, and which, in its subsequent progress along the coast of North America, mingles it with the discharge of the rivers east of the Alleghanies; so that it must have been regularly distributing for a long period over some mighty space, not less perhaps than the entire floor of the North Atlantic, a stratified formation, involving much of the history of minerals, and of the vegetable and animal life of America, and certainly nothing inferior, either in extent or thickness, to any one of those formations which are thought to characterize a geological epoch. Nor is this a singular instance; for something of the same phenomenon must occur with the rivers south of Cape St. Roque; and many illustrations could be found on such of the coasts of Asia as are swept by the currents from the Pacific.

Resuming our remarks concerning the changes induced upon the solid land by the levelling or abrading agency of rivers and seas, and reflecting on the existence of an elevating cause (a power whose origin is unknown, but which can force up mountain ridges, and raise continents to loftier levels), we may now conceive what would be presented to the inquirer long ages hence, should the bed of the existing ocean be

raised, and, in compensation, many existing continents submerged. Over vast spaces such as the floor of the Atlantic, regular strata would appear, having clear marks of being originally horizontal, whatever inclination the fracturing and elevating cause might then have given them, and varying in composition and in the relics they contained, precisely as that old continent varied, of whose debris they were formed. Elsewhere, confined and local stratifications would be detected, partly marine, partly fluviatile, having much variety of character. In some places there would be found marks of sudden wreck, and of convulsion so manifest and tremendous, that although springing only out of partial erruptions of the sea, rash speculation might at first incline us to infer from it some universal and overwhelming catastrophe, especially as many portions of this system of various stratification would be pierced by the igneous rocks, which are products of those submarine volcanoes that often agitate our oceans, and sometimes upheave new islands. Such would be the system of the new continents, capable of upholding animal and vegetable life; and of the debris of such continents, in the long course of ages, new stratifications would be again formed, which also might be upreared when their parent masses had sunk. In fact, we see no conclusion to the play of those two simple causes which appear to regulate the condition of the earth.

2. These probable annals of the future, are the actual annals of the past. The immense range, and great varieties, of the stratified rocks upon which the geologist speculates, bear every mark of having been deposited according to the operations to which we have referred — out of the debris of submerged continents: and of having been raised from their low and horizontal submarine position, by the action of that power, which, at different epochs, upheaved our mountain ranges.

To study these stratified rocks in detail, is the business of the geologist; to note their meaning and general relation to existing changes, is sufficient for the physical geographer. Many of them, however, are of economical importance, and enter among the items of the actual wealth of countries; on which account, we subjoin a table of all the formations, taken from the work of Mr. Lyell.

The grand divisions of the formations of all epochs are, it will be observed, hypogene (plutonic and metamorphic), volcanic, aqueous, and alluvial. The *hypogene* or *nether-formed* rocks, are those chrystalline masses referred to at the close of the first section of this chapter; — the *plutonic;* and others, supposed to have been originally stratified, but much altered in texture by contact with the great heat of the plutonic rocks, viz. the *metamorphic.* The *volcanic* rocks are the produce of existing or ancient volcanoes, *i. e.* of the agents which produced the plutonic rocks, acting not under pressure, but sending forth its molten productions upon the surface of the globe. The *aqueous* formations are those deposited by the sea, or at the bottom of lakes; and the *alluvial*, those laid down by rivers. It is among the earlier formations, classed according to *time*, that those metallic veins are found, which, as we shall afterwards see, add much to the wealth of different countries. The carboniferous or coal formation, chiefly originating from the debris of the buried vegetation of old continents, and the great *lime* formations are also important elements of wealth. More minute accounts of the origin and nature of these formations must be sought for in treatises on geology.

TABLE SHOWING THE RELATIONS OF THE ALLUVIAL, AQUEOUS, VOLCANIC, AND HYPOGENE FORMATIONS OF DIFFERENT AGES.

Periods.	*Formations.*		*Some of the Localities where the Formations occur.*
I. RECENT.	Alluvial		Beds of existing rivers, &c.
	Aqueous	*a.* Marine	Coral reefs of the Pacific.
		b. Freshwater	Bed of Lake Superior, &c.
	Volcanic		Etna, Vesuvius.
	Hypogene	*a.* Plutonic	*Concealed;* foci of active volcanoes.
		b. Metamorphic	*Concealed;* around the foci of active volcanoes.
II. TERTIARY. 1. Newer Pliocene.	Alluvial		Gravel covering the Newer Pliocene strata of Sicily.
	Aqueous	*a.* Marine	Val di Noto, Sicily.
		b. Freshwater	Colle, in Tuscany.
	Volcanic		Val di Noto, Sicily.
	Hypogene	*a.* Plutonic	*Concealed;* foci of Newer Pliocene volcanoes — underneath the Val di Noto.
		b. Metamorphic	*Concealed;* near the foci of Newer Pliocene volcanoes — underneath the Val di Noto.
2. Older Pliocene.	Alluvial		Norfolk?
	Aqueous	*a.* Marine	Subappenine formations.
		b. Freshwater	Near Sienna.
	Volcanic		Tuscany.
	Hypogene	*a.* Plutonic	*Concealed;* foci of Older Pliocene volcanoes — beneath Tuscany.
		b. Metamorphic	*Concealed;* probably near the same foci.

	Periods.	Formations.		Some of the Localities where the Formations occur.
II. TERTIARY—*continued.*	3. Miocene.	Alluvial		Mont Perrier, Auvergne — Orleanais.
		Aqueous	*a.* Marine	Bordeaux. Dax.
			b. Freshwater	Saucats, near Bordeaux.
		Volcanic		Hungary.
		Hypogene	*a.* Plutonic	*Concealed;* foci of Miocene volcanoes—beneath Hungary.
			b. Metamorphic	*Concealed;* probably around the same foci.
	4. Eocene.	Alluvial		Summit of North and South Downs?
		Aqueous	*a.* Marine	Paris and London basins.
			b. Freshwater	Isle of Wight — Auvergne.
		Volcanic		Ronca, Vicentine; oldest volcanic rocks of the Limagne d'Auvergne.
		Hypogene	*a.* Plutonic	*Concealed;* foci of Eocene volcanoes—beneath Vicentine and the Limagne d'Auvergne.
			b. Metamorphic	*Concealed;* probably near the same foci.
III. SECONDARY.	1. Cretaceous group.	Alluvial.		
		Aqueous	*a.* Marine	Wiltshire. North Downs. Flamborough Head.
			b. Freshwater.	
		Volcanic		Northern Flanks of the Pyrenees? Near Dax?
		Hypogene	*a.* Plutonic.	
			b. Metamorphic.	
	2. Wealden group.	Alluvial		Portland "Dirt-bed" containing pebbles.
		Aqueous	*a.* Marine.	
			b. Freshwater	Weald of Surrey, Kent, and Sussex.
		Volcanic.		
		Hypogene	*a.* Plutonic.	
			b. Metamorphic.	
	3. Oolite group.	Alluvial.		
		Aqueous	*a.* Marine	Oxford. Bath. Jura chain.
			b. Freshwater.	
		Volcanic		Hebrides?
		Hypogene	*a.* Plutonic	*Concealed;* beneath the Hebrides.
			b. Metamorphic	
	4. Lias group.	Alluvial.		
		Aqueous	*a.* Marine	Lyme Regis. Whitby. Aberthaw.
			b. Freshwater.	
		Volcanic		Hebrides?
		Hypogene	*a.* Plutonic.	
			b. Metamorphic.	Alps? Valorsine in Savoy.
	5. New Red Sandstone and Magnesian limestone group.	Alluvial.		
		Aqueous	*a.* Marine	Cheshire. Staffordshire. Vosges. Westphalia. (Muschelkalk.)
			b. Freshwater.	
		Volcanic		Near Exeter, Devon.
		Hypogene	*a.* Plutonic	*Concealed;* beneath Devonshire.
			b. Metamorphic.	
	6. Carboniferous and Old Red Sandstone group.	Alluvial.		
		Aqueous	*a.* Marine	Clifton. Mendip. Edinburgh.
			b. Freshwater	Coal measures of North of England and near Edinburgh.
		Volcanic		Forfarshire. Edinburgh. Fife. Durham. High Teesdale.
		Hypogene	*a.* Plutonic	*Concealed;* beneath Edinburgh, Northumberland, Durham.
			b. Metamorphic	Near the Plutonic rocks of the same period.
IV. TRANSITION.	7. Silurian and Greywacké group.	Alluvial.		
		Aqueous	*a.* Marine	Wenlock, Shropshire.
			b. Freshwater.	
		Volcanic		Shropshire.
		Hypogene	*a.* Plutonic	*Concealed;* beneath Shropshire.
			b. Metamorphic	Near the Plutonic rocks of the same period.
V. PRIMARY ROCKS.*		Alluvial		Probably all destroyed by denudation, or converted into hypogene.
		Aqueous		
		Volcanic		
		Hypogene	Plutonic	Perhaps a considerable part of the granite now visible.
			Metamorphic	Probably a large proportion of the gneiss, mica-schist, and other stratified crystalline rocks now visible.

§ 3. *The Constitution and Motion of the Atmosphere. Physical Climate. Meteorological Phenomena.*

I. THE atmosphere, or that elastic fluid which surrounds the globe, performs the most important functions in the economy of nature. It is essential to the life of a great portion of organic beings, spreads moisture over the land, receives and dissipates or decomposes the mephitic vapours exhaled from the earth's surface, and by its incessant motion tempers the extremes of heat and cold; thus enabling man to support himself in every climate from the equator to the vicinity of the pole.

1. That well known instrument, the *barometer*, enables us to measure the weight

* By primary formations are meant those, whether stratified or unstratified, in which no distinct fossils have as yet been discovered, and which are older than those most ancient European rocks, the transition or greywacké.

of the atmosphere, from which we can approximately compute its *height*. The whole elastic fluid around us is nearly equal in weight to a sheet of mercury of a depth of thirty inches, or to a sheet of water of thirty-four feet; and were its density everywhere the same as at the surface, it would thus reach no higher than 27,000 feet, or five miles. But its extreme elasticity causes it to expand as it rises, and we must therefore search for its upper limit much farther off. A limit is absolutely fixed by physical considerations, and perhaps there is no inferior one. The highest portion of the atmosphere, which is carried round in twenty-three hours and fifty-six minutes, by the rotation of the earth on its axis, would be projected into space if their centrifugal force at that distance was not less than their gravitation towards the centre. But the centrifugal force is directly as the distance, while the power of gravity diminishes as its square. From which we infer, that the balance or equilibrium of the two influences will take place at the distance of 6.6 radii from the earth's centre, or at the elevation of 22,200 miles. The distance of this extreme boundary surpasses all ordinary conceptions of the space occupied by the dilatable fluid amid which we live, yet it scarcely exceeds the eleventh part of the distance of the moon, which was held by the ancients to communicate with our atmosphere. If it really spreads out to the limit now assigned, it must at its remote verge attain a degree of tenuity which would utterly baffle imagination to conceive.

2. The most general feature or characteristic of the air, considered with regard to its elevation, is the fact, that it everywhere diminishes in heat as it ascends — the fact alluded to in the first section of this chapter, when speaking of the influence of *elevations*. This is owing to the physical law, that gases, when diminished in density, acquire an increased capacity for heat; so that, when a body is raised in the air, part of its heat must be abstracted by the mass of rarer fluid which surrounds it. Hence the existence of great degrees of cold in all climates as we ascend mountains; and hence that line of perpetual congelation, to which we formerly alluded, osculating the earth at the poles, and bulging out at the equator like an eccentric ellipsoid. Many theories and formulæ have been proposed to express the law of this decrease of heat; we prefer that of Sir John Leslie. If B and b denote the barometric pressure at the lower and upper stations; then will $\left(\frac{B}{b} - \frac{b}{B}\right) \times 25$ express, on the centigrade scale, the diminution of heat in ascent. Hence, for any given latitude, the precise point of elevation may be found, distinguished by any temperature, for instance, the point where eternal frost prevails. Put $x = \frac{b}{B}$ and $t =$ the standard temperature of the place; then $\left(\frac{1}{x} - x\right) \times 25 = t$, or $x^2 + \cdot 04\, tx = 1$, which equation being solved, gives the relative elasticity of the air at the limit of congelation, whence the corresponding height is determined. — It is proper to remark, that by aid of the physical law expressing the relative elasticity or weight of the air at its different elevations, and of this formula, methods have been evolved by which the height of stations are discovered by noting the condition of the barometer or thermometer.

3. The atmospheric phenomenon next in order of generality, gives rise to the striking and varied action of *winds*. Winds arise from the great expansibility of the air by heat, combined with the fact, that different parts of the earth are very unequally heated. Suppose a small part of the earth's surface to be suddenly and considerably heated above the temperature of the surrounding portions, it is clear, in the first place, that the column of superincumbent air will be correspondently heated, and thereby greatly expanded. Could that column maintain an independent existence, or were it *rigid*, the expansion would merely increase its length; but as the air is fluid, the column at the top will manifestly *flow over* upon the neighbouring masses, so that the *weight* of the air over the heated part of the earth would be diminished. It is easy to see that a motion or rush of air would supervene at the earth's surface in such circumstances, towards that heated column, from all sides of it; for the weight of neighbouring columns being greater, they would *bear in*, so to speak, upon the lighter column, and by a simultaneous rush of greater or less violence, supply the comparative void. Two actions or motions are thus necessarily occasioned by the fact of the overheating of any spot on the earth: — first, a wind *from* the heated spot in the upper regions of the atmosphere, arising from the flowing over of the expanded column; and secondly, a wind *towards* the heated spot near the earth's surface, or in the lower regions of the atmosphere, arising from the superior weight of the surrounding aerial columns. Every variation, then, in terrestrial temperature must tend to originate two systems of winds, of contrary and counterbalancing directions, which retain the atmosphere in equilibrium, and operate, by a wholesome circulation, in moderating what would otherwise

be extremes of temperature. All local winds, such as the Bize, Sirocco, Harmattan, Samiel or Simoom, admit of explanation on the foregoing principles; but we shall confine ourselves to a particular description of a very general local wind, the *land and sea breezes*. A body of water is much less affected by the presence or absence of the sun than a mass of land. It has been computed, that the change of temperature in the air, caused by the succession of day and night, is about thirty times less upon a spacious lake than over the surrounding land, — the air over the land being much overheated during the day, and underheated during the night. During the day, accordingly, in every latitude, but especially within the tropics, a refreshing wind blows from the sea, and is succeeded by an opposite current from the interior of the land on the approach of evening and during a great part of the night. The ordinary phenomena of these winds are well described by Captain Dampier: —

"These sea-breezes do commonly rise in the morning about nine o'clock, sometimes sooner, sometimes later. They first approach the shore so gently, as if they were afraid to come near it; and ofttimes they make some faint breathings, and, as if not willing to offend, they make a halt, and seem ready to retire. I have waited many a time, both ashore to receive the pleasure, and at sea to take the benefit of it. It comes in a fine, small, black curle upon the water, when as all the sea between it and the shore not yet reached by it is as smooth and even as glass in comparison. In half an hour's time after it has reached the shore, it fans pretty briskly, and so increaseth gradually till twelve o'clock; then it is commonly strongest, and lasts so till two or three a very brisk gale. About twelve at noon it also veers off to sea two or three points, or more, in very fair weather. After three o'clock it begins to die away again, and gradually withdraws its force till all is spent; and about five o'clock, sooner or later, according as the weather is, it is lulled asleep, and comes no more till the next morning. These winds are as constantly expected as the day in their proper latitudes, and seldom fail but in the wet season. On all coasts of the main, whether in the East or West Indies, or Guinea, they rise in the morning, and withdraw towards the evening; yet capes and headlands have the greatest benefit of them, where they are highest, rise earlier, and blow later. Land-breezes are as remarkable as any winds that I have yet treated of: they are quite contrary to the sea-breezes; for those blow right from the shore, but the sea-breeze right in upon the shore; and as the sea-breezes do blow in the day and rest in the night, so, on the contrary, these do blow in the night and rest in the day, and so they do alternately succeed each other. For when the sea-breezes have performed their offices of the day, by breathing on their respective coasts, they, in the evening, do either withdraw from the coast, or lie down to rest. Then the land-winds, whose office is to breathe in the night, moved by the same order of divine impulse, do rouse out of their private recesses, and gently fan the air till the next morning; and then their task ends, and they leave the stage. There can be no proper time set when they do begin in the evening, or when they retire in the morning, for they do not keep to an hour; but they commonly spring up betwixt six and twelve in the evening, and last till six, eight, or ten in the morning. They both come and go away again earlier or later, according to the weather, the season of the year, or some accidental cause from the land; for on some coasts they do rise earlier, blow fresher, and remain later, than on other coasts, as I shall show hereafter. These winds blow off to sea, a greater or less distance, according as the coast lies more or less exposed to the sea-winds; for in some places we find them brisk three or four leagues off shore, in other places not so many miles, and in some places they scarce peep without the rocks, or, if they do sometimes in very fair weather make a sally out a mile or two, they are not lasting, but suddenly vanish away, though yet there are every night as fresh land-winds ashore at those places as in any other part of the world. Indeed, these winds are an extraordinary blessing to those that use the sea in any part of the world within the tropics; for as the constant trade-winds do blow, there could be no sailing in these seas; but, by the help of the sea and land-breezes, ships will sail 200 or 300 leagues, as particularly from Jamaica to the Lagune of Trist, in the Bay of Campeachy, and then back again, all against the trade-wind. The seamen that sail in sloops or other small vessels in the West Indies do know very well when they shall meet a brisk land-wind by the fogs that hang over the land before night; for it is a certain sign of a good land-wind to see a thick fog lie still and quiet, like smoke over the land, not stirring any way; and we look out for such signs when we are plying to windward. For if we see no fog over the land, the land-wind will be but faint and short that night. These signs are to be observed chiefly in fair weather; for in the wet season fogs do hang over the land all the day, and it may be neither land-wind nor sea-breeze stirring. If in the afternoon, also, in fair weather, we see a

tornado over the land, it commonly sends us forth a fresh land-wind. These land-winds are very cold, and though the sea-breezes are always much stronger, yet these are colder by far. The sea-breezes, indeed, are very comfortable and refreshing; for the hottest time in all the day is about nine, ten, or eleven o'clock in the morning, in the interval between both breezes; for then it is commonly calm, and then people pant for breath, especially if it is late before the sea-breeze comes, but afterwards the breeze allays the heat. However, in the evening again, after the sea-breeze is spent, it is very hot till the land-wind springs up, which is sometimes not till twelve o'clock, or after."*

It will be manifest that, viewing the general relations of the different parts of the earth to the sun, the operation we have described and illustrated in the case of land and sea breezes must proceed on a gigantic scale. The air superincumbent over the torrid zone being heated to a great degree above that superincumbent over the temperate and frigid zones, must, as before explained, *overflow* in the superior parts of its column, and in the inferior parts there will be a counterbalancing current from the poles towards the equator. If the earth were at rest, we would thus have two counterbalancing and general tendencies of the winds, a north wind at the earth's surface in north latitudes, and a south wind at the surface in southern latitudes, and their opposites in the higher regions of the atmosphere; but as the earth is not at rest, revolving, as already explained, on its axis, in somewhat less than twenty-four solar hours, a complicacy of action springs from the combination of these two causes, which, well considered, yields a solution of the most remarkable phenomena of winds. Were the atmosphere in a state of internal rest, it would evidently partake of the rotatory motion of the earth, and continue internally unaffected by it; but if a column is propelled from the pole towards the equator, it comes from places whose celerity of rotation is small to places where it is greater, and consequently turns with less celerity to the east than those places do with which it comes in contact: it will therefore in such circumstances seem to flow in an opposite direction, as from *east to west.* The deviation of the wind from its original direction will obviously be the greater the more the velocity of rotation of the point where the motion first originated differs from the velocity of rotation of the place at which the wind is observed, or, in other words, the greater the difference of geographical latitude of the two places; at the equator, a current from either pole will become an east wind, having passed through all degrees of north and south-east through the temperate regions. "These great south and north currents," says the author of Physical Geography, in the Encyclopædia Britannica, "which are to be considered as the *primary* winds, receive various modifications. The under current, which proceeds from the polar regions, having impressed upon it the slow rotatory motion of these regions, does not acquire in its journey the velocity of the parts it passes over. Instead, therefore, of proceeding directly along the meridian, it is deflected to the westward. It pursues this lateral course more and more as it approaches the torrid zone, and the impulse south and north being destroyed when the currents from the opposite hemisphere meet at the equator, the motion westward alone remains. This constitutes the well known trade wind, which blows from the east at the equator, from the north-east at the northern tropic, and the south-east at the southern. The upper and counter current again, carrying with it the rapid velocity of the equatorial regions, does not travel right along the meridian, but deviates more and more to the east as it advances; and when its progress towards the pole is stopped by the accumulation of air from the opposite meridians, the motion eastward alone remains, and it settles into a west wind. Thus a constant east wind should prevail at the equator, and a constant west wind near the poles; but the latter, being primarily an upper current, may not be invariably felt as a west wind at the surface. It does not follow, however, that the upper and under currents preserve their relative situation over all the temperate zone. From the greater accumulation of air in the higher latitudes, and from variations of temperature produced by local causes, the upper current will often be bent down to the surface, and the lower current ascend. This interchange will take place occasionally at all parts of the temperate zone. Hence, in high latitudes, storms of wind, which mingle the warm upper current with the cold air below, always produce an increase of heat. In the northern hemisphere, then, when the cold current from the pole sweeps the surface rapidly, we have a *north* wind; it becomes a *north-east* wind when its motion southward is retarded; an *east* wind when it is checked, and a *south-east* when it is deflected back, by mingling with a current from the south; all of which, except the last, are generally found to be

* Voyages, Vol. II. Part. III. ch. iv. "Of Land and Sea breezes."

cold winds. When the warm current from the south descends and sweeps the surface, we have a *south* wind if its motion northward is rapid; a *south-west* when its motion northward is retarded; a *west* wind when it is checked; and a *north-west* when it meets and mingles with a current from the north. All these, except the last, are generally warm winds, as experience proves. The line of division between the upper and lower currents should be where the mercury stands at 15 inches, which is at the height of $3\frac{1}{2}$ miles. This theory, upon the whole, agrees tolerably well with the facts. But the variable surface and temperature of the land greatly affect the course and velocity of the winds. In the torrid zone, within the parallel of 25° or 30°, on each side of the equator, the trade winds blow constantly from the east. From the superior warmth of the northern hemisphere, the line that separates the opposite trade winds is not the equator, but the second or third parallel north. To a certain extent, also, they follow the course of the sun, reaching a little further into the south hemisphere, and contracting their limits in the north when the sun is on the south side of the equator, and making a reverse change when he declines to the north. In a zone of variable breadth in the middle of this tract, calms and rains prevail, caused, probably, by the mingling and ascending of the opposite aerial currents. High lands change or interrupt the course of the trade winds. Thus, under the lee of the African shore, calms and variable winds prevail near the Cape Verd Islands, while an eddy or counter current of air from the south-west is generated under the coast of Guinea. The lofty barrier of the Andes shelters the sea on the Peruvian shores from the trade winds, which are not felt till a ship has sailed 80 leagues to the westward; but the intervening space is occupied by a wind from the south. In the Indian Ocean the trade wind is curiously modified by the lands which surround it on the north, east, and west. The southern trade wind blows regularly from the east and south-east, from 10° of south latitude to the tropic, but in the space from 10° south latitude to the equator, north-west winds blow during our winter, (from October to April,) and south-west in the other six months; while, in the whole space north of the equator, south-west winds blow during summer, and north-east during winter.

"The region of constant winds is confined within the 30th parallel on each side of the equator. On the outer side of these limits, calms prevail pretty generally over a narrow space, beyond which the region of variable winds extends to the pole. In the open sea, where the true direction of the winds is best known, navigators have repeatedly observed that throughout this region the prevailing wind is from the west. Mr. Forster observes, that beyond the tropics, the west winds are the most universal. That east winds have an ascendancy within the Antarctic circle, as he thinks, may be questioned; few observations having been made there, and those few not to be depended on, in consequence of the local influence of the ice. According to the author of Lord Anson's voyage, "A westerly wind almost perpetually prevails in the southern parts of the Pacific Ocean," (he speaks of latitude 60°,) and a similar wind in the northern parts carried the Spanish galeons from Japan to California, along the parallel of 35° or 40°. West winds prevail in Kamchatka; they blow three-fourths of the year in Hudson's Bay; the west and north-west winds predominate greatly at Melville Island; and it is a familiar fact among mariners, that, by means of these winds, the voyage eastward across the North Atlantic is generally accomplished in about half the time of the voyage westward. On the west coast of Europe, too, the west and south-west winds are the most general. It is remarked, also, that in our climate, south and south-east winds are the most rare; that winds between north and east are almost invariably cold; those between south and west warm; and those between north and west of a mixed character. So far the facts correspond generally with the theory, though many anomalous circumstances may be found.

"The *change of the seasons* which affects the local temperature so much, necessarily influences the atmospheric currents. Accordingly, the most violent tempests are about the equinoxes, and in every country there are prevailing winds peculiar to certain seasons. It may be suspected, that most of the winds observed on land or in confined seas are merely local eddies, or reflex currents, produced by the irregularities of the surface. Thus, while the south-west wind prevails almost one-half of the year at Dover, London, and in the west of England generally, it is scarcely felt at Liverpool, which lies in the gorge of a valley, where the western chain of hills is interrupted; and on the other hand, the south-east, so uncommon in the rest of England, is the predominating wind here. In the long basin of the Red Sea, the wind blows in no direction but right up or down. In Lancaster Sound, Captain Parry found the wind to blow always either east or west. For ten months of the year, a wind (which is probably a smaller branch of the north trade wind) blows constantly up the valleys of

the Mississippi and Ohio, preserving a breadth in the latter of twelve or fifteen miles. In the list of *Vents Dominans* for the interior of Europe, collected by Cotte, nothing like a system can be discovered — nothing but local currents running in every possible direction, according to the position of mountains and valleys. Winds, indeed, even when strong, are often confined to a space surprisingly small. In the temperate, but still more in the frigid zone, two or three winds are often seen blowing from, or to, different points within a few leagues; nay, of two ships within sight of one another, one is sometimes becalmed, while the other is seen struggling with a storm. In the northern seas, even strong gales, when they have carried a ship into frozen water, invariably desert her, or give place to a wind which blows from the ice. The effect can only be attributed to the comparative coldness of the ice, and warmth of the water, generating a local descending current over the one, and an ascending current over the other."

4. Hitherto we have spoken of the atmosphere only as a permanently elastic body; but it contains, besides, a mass of *vapour*, or rather a vaporous atmosphere, which, supplied by evaporation, regulated by its own laws, and affected by colds and heats in a peculiar manner, mingles with the elastic atmosphere, and produces clouds and rain. The phenomena originating in the intermingling of these two atmospheres are most various and complex. We cannot allude in this work to more than a very few of the more prominent. Owing to a want of correspondence between the elasticities of the successive beds of vapour, and the heat of the corresponding beds of the dry air, each portion of air in rising vertically grows gradually damper; and after having reached a certain altitude, again becomes drier. The intermediate region, or the region of extreme humidity, which is the region of *clouds*, varies with the seasons and circumstances, but we shall not much err if we estimate its average position at the height of two miles at the pole, and four miles and a half under the equator. The general theory of *rain* is remarkably simple. As the air, on growing warmer, becomes drier, or capable of containing more moisture, so it is disposed, on cooling, to part with its moisture in the form of rain. The quantity of moisture which air can hold increasing in a much faster ratio than its temperature, it is plain that the intermingling of two saturated portions of different temperatures must cause the resulting mass to release portions of its vapour, and constitute rain. The occurrence and quantity of rain at any place are dependent, partly on the currents in the whole atmosphere, and partly on the changes of local temperature. Referring the student of this part of meteorology to Mr Daniell's Essays, we may state generally, that rain will be more copious at the equator than at the poles — at the sea-coast than in the interior — and in mountains and high grounds than in plains. Winds, too, exert a certain influence, which at any particular place depends on their temperature, and on their having traversed a dry or a humid surface. Where so many causes interfere, whose effects are scarcely capable of estimation, it would be difficult to determine the depth of rain proper to each parallel, even were our observations more numerous and accurate than they are. The following is the estimate by Humboldt, to whose authority we defer in every question of this kind: —

Lat.	Eng. Inches.	Lat.	Eng. Inches.
0°	96	45°	29
19	80	60	17

Since the supply of humidity is greatest in the vicinity of the sea, the rains must be generally more abundant there than in the interior. On the other hand, currents of air fraught with vapour move with great rapidity, and the atmosphere is far from needing an entirely new supply from the ocean after each precipitation, because three-fourths probably of the rain that falls soon rises again into the air, and continues thus to circulate between the clouds and the earth. These circumstances lead us to conclude, that the difference in the annual depth of rain, between inland places and those on the coast, is not so great as might be imagined. We find, accordingly, that a small increase of elevation compensates for a great distance from the sea.

The elevation of the land has a much more marked effect on the quantity of rain than its distance from the sea. Mountains precipitate the humidity of the atmosphere, not so much by attracting it to their summits, as in consequense of their rocky or grassy sides, when acted upon by the sun, heating large masses of air in the cold upper regions of the atmosphere. These warm masses of air, which abstract moisture from the aerial columns around them, stream upwards, and mingle with the cold strata above, or come into contact with cold currents moving laterally, or suffer sudden and partial changes of temperature from the vicissitudes of night and day, and thus incessantly generate the circumstances which cause precipitation. It is evident that snow-

clad mountains, from the constancy of their temperature, will serve much less perfectly than those whose sides are bare, as nuclei for precipitating the atmospheric humidity; and that, in temperate climes, the rains will be more abundant on all mountains in summer than in winter. But though more rain falls in mountainous than in level countries, the depth is in all cases greater at the bottom of a mountain than at the top, and close to the surface of the ground than at any distance above it.

In the torrid zone, a small thick rain falls every day on that side of the equator on which the sun is, but generally intermits during the night. When it ceases in the one hemisphere, it commences in the other, and is nearly perpetual in a zone of two or three degrees in breadth, which separates the two systems. When the rains begin, the heat increases, and the trade wind subsides. Yet, even in the torrid zone, there are tracts where rain seldom or never falls, such as the Sahara of Africa, the low coasts of Caraccas, and the desert shore of Peru, between 15° and 30° of south latitude. In many parts there are two wet and two dry seasons in the year; and in some regions, from the effect of mountain ranges and peculiar winds, places under the same parallel have their wet and dry seasons at opposite periods. Though the annual depth of rain is greatest within the tropics, the number of rainy days follows an inverse order, and diminishes as we advance from high latitudes to the torrid zone. More rain falls in summer than in winter in all latitudes; but in the temperate zones the rains of winter are more frequent than those of summer, though less in quantity.

Mr. Dalton reckons the annual deposit of water in England to be 31 inches of rain, and five of dew. His estimate is perhaps rather high. The distribution of the rain through the different seasons is so much affected by local circumstances, that it is difficult to ascertain the mean result. In general, the fall seems to be least in spring, and greatest in autumn, and less in the six winter months than in the summer. The following table affords an interesting view of the connection between the phenomena of wind and rain in this country. It gives, for one year (1775) the number of days each wind prevailed at London; the quantity of rain that fell during the prevalence of that wind; and the humidity of the winds, or the relative quantity of moisture which each would deposit in the same space of time.

Winds.	*Days.*	*Rain.*	*Humidity.*	*Winds.*	*Days.*	*Rain.*	*Humidity.*
N.	22½	0.327	11	N. W.	39½	2.391	48
S.	21½	0.251	9	S. E.	32½	0.944	22
E.	11	0.168	12	N. E.	72	2.148	23
W.	18½	1.907	82	S. W.	148	18.975	100

The whole quantity of rain for that year was 27.11 inches; of which it will be observed that two-thirds fell with the south-west wind. The prevailing winds are the south-west and the north-east, the primary winds of our hemisphere. The least frequent are the east and the west. The south and the north winds are the driest, and the south-west and the west the most humid, as might be expected.

The formation of snow and hail is owing to the cold of the upper atmosphere. The formation of dews proceeds from the cooling of the earth's surface by *radiation*, which causes the deposition and frequent freezing of moisture. The colds of India, Persia, and other countries of clear skies, spring also from radiation. See, on this subject, Leslie's various Essays, and also the Treatise on Dew by Dr. Wells.

II. We have now arrived at the subject of *Climate*, which, although dependent also on other causes, is so dependent on the atmospherical actions above explained, that it cannot be properly treated under any other section of physical geography.

The first and chief cause of the more general differences of climate is astronomical, viz. the position of the different zones of the earth in regard of the sun's place. So far as this is concerned, however, we obtain only a few very vague determinations for the distribution of sea and land. The elevation, &c. of countries frequently compensate for unfortunate *astronomical* position. It would require many tables to present all the effects of this astronomical position, with reference to the relative light and heat it infers at different seasons of the year; nor are these necessary here. One feature, however, of climate arising from the position of places upon the globe ought to be tabulated, viz. the duration of the longest day in different latitudes, as greatly influencing vegetation. The following table exhibits this. It will be noticed, that beyond latitude 66° 32′, the day can no longer be reckoned by *hours*, and that beyond latitude 67° 23′ it is reckoned by *months*: —

TABLE OF CLIMATES.

Climates of Half an Hour.	*Longest Day.*		*Latitude.*		*Extent of Climates.*		*Climates of Half an Hour.*	*Longest Day.*		*Latitude.*		*Extent of Climates.*	
Their Number.	*Hours.*	*Min.*	*Deg.*	*Min.*	*Deg.*	*Min.*	*Their Number.*	*Hours.*	*Min.*	*Deg.*	*Min.*	*Deg.*	*Min.*
0	12	0	0	0	0	0	12	18	0	58	25	1	49
1	12	30	8	34	8	34	13	18	30	59	57	1	32
2	13	0	16	43	8	9	14	19	0	61	16	1	19
3	13	30	24	10	7	27	15	19	30	62	24	1	8
4	14	0	30	46	6	46	16	20	0	63	20	0	56
5	14	30	36	28	5	42	17	20	30	64	8	0	48
6	15	0	41	21	4	53	18	21	0	64	48	0	40
7	15	30	45	29	4	8	19	21	30	65	20	0	32
8	16	0	48	59	3	30	20	22	0	65	46	0	26
9	16	30	51	57	2	58	21	22	30	66	6	0	20
10	17	0	54	28	2	31	22	23	0	66	20	0	14
11	17	30	56	36	2	8	23	23	30	66	28	0	8
							24	24	0	66	32	0	4

Climate of Months.	*Longest Day.*	*Latitude.*		*Extent of Climates.*		*Climate of Months.*	*Longest Day.*	*Latitude.*		*Extent of Climates.*	
Their Number.	*Months.*	*Deg.*	*Min.*	*Deg.*	*Min.*	*Their Number.*	*Months.*	*Deg.*	*Min.*	*Deg.*	*Min.*
1	1	67	23	0	51	4	4	78	31	4	52
2	2	69	10	2	27	5	5	84	5	5	34
3	3	73	39	3	49	6	6	90	0	5	55

N. B.—We do not in these Tables take any notice of the effects of the refraction, which increases the duration of the day, particularly towards the poles. Under the pole itself the refraction alone, independent of the twilight, increases the day, which is six months long, 67 hours.

The *Physical Climate* of a country depends on the distance of the latter from the equator and its level above the sea; and, in a smaller degree, on the nature of the surface, the abundance or scarcity of humidity, the proximity or remoteness of the sea, of lakes, of mountains, of arid or frozen plains, and perhaps also it is affected by what has been termed the internal heat of the earth.

The mean temperature of the earth at the equator, which is pretty uniform under every meridian, is estimated, by Humboldt, at 81°.5 of Fahrenheit's scale. The decrease of heat, *as we recede from the equator*, on either side, follows different laws in the two hemispheres, and in the same hemisphere under different meridians. On the west coast of Europe, about the meridians of London and Paris, the cold increases much more slowly as we proceed northward from the equator, than in any other part of the world. In North America, at the meridian of 80° or 90° west from London, and in Asia at the same distance east, the increase of cold is much more rapid as we approach the pole. In the northern hemisphere, the cold is generally greatest on the east side of both the old and new continents, and least on the west. Humboldt has generalised this fact, and inferred, that all continents and large islands are warmer on the west side than the east. The following table, extracted from Humboldt's essay, exhibits the different gradations of the mean annual temperatnre in Western Europe and North America, continuing the scale to the equator: —

Latitude.	*Old World.*	*New World.*	*Difference.*
0	81°.5	81°.5	0
20	77 .9	77 .9	0
30	70 .7	67 .1	3.6
40	63 .5	54 .5	9.
50	50 .9	38 .3	12.6
60	41 .0	25 .0	16.
70	33 .0	0 .0	33

We have few observations for the east coast of Asia; but the following shows that the climate of this region approaches to that of Eastern America rather than Western Europe: —

Europe.		*Asia.*		*America.*	
Naples,	Lat. 41°. Temp. 63 .3	Pekin,	Lat. 40°. Temp. 54 .8	Philadelphia,	Lat. 40° Temp. 53 .4

Thus the mean annual temperature of North America is 9° lower than that of Western Europe at the latitude of 40°, 16° lower at latitude 60°, and 33° lower at lati-

tude 70°; a similar distance obtains between the climates of Western Europe and Eastern Asia. By comparing places under the same parallel, we find that this change is not sudden, but progressive. St. Petersburgh, on the same parallel with Upsal, is 3° colder, and Moscow is 5° colder than Copenhagen. The annual temperature of West Greenland in latitude 70°, which is 17° or 18°, according to Sir C. Gieseké, is very nearly the mean between that of the North Cape and Melville Island, as its intermediate situation would lead us to expect. These differences are rendered more sensible when we connect the places having the same annual temperature by lines, which Humboldt has named isothermal lines. Thus the isothermal line of 59° (Fahrenheit) passes along the latitude of 43° in Europe, but descends to latitude 36° in America. The isothermal line of 41° passes from the latitude of 60° in Europe, to that of 48° in America, showing that the same annual temperature which is found at the 60th parallel on the eastern side of the Atlantic, is only found at 12° further south on its western shores. The western coast of North America again is warmer than the east; and hence if we were to trace the isothermal lines round the northern hemisphere, they would all have concave summits at the east sides of Asia and America, and convex summits at the west sides of America and Europe.

The difference of mean temperature between summer and winter (reckoning each to consist of three months) is nothing at the equator, and constantly increases as we approach the pole, as shown in the following table: —

	Latitude.	MEAN TEMPERATURE *Of Winter.*	MEAN TEMPERATURE *Of Summer.*	*Difference.*
Algiers,	37°	61°.5	80°.2	18°.7
Buda,	47½	34 .0	70 .5	26 .5
Upsal,	60	25 .0	60 .2	35 .2

The extreme difference of the seasons is smaller under the warm meridians of Western Europe than anywhere else, and seems to be greatest where the mean annual temperature is lowest, — near the east coast of Asia and America: —

	Latitude.	*Winter.*	*Summer.*	*Difference.*
Copenhagen,	55½°	30°.7	62°.6	31°.9
Moscow,	55½	10 .8	67 .1	56 .3
Rome,	42	45 .8	75 .2	29 .4
Pekin,	40	26 .4	82 .6	56 .2
New York,	41	29 .8	79 .2	49 .4
	Mean Annual Temperature.	*Winter.*	*Summer.*	*Difference.*
St. Malo,	54°	42°.3	66°.0	23°.7
New York,	54	29 .8	79 .2	49 .4

If we draw a line on the map in a north-east direction from Bourdeaux to Warsaw, and continue it till it strike the Wolga in latitude 55°, all the places situated under this line, at the same elevation, will have nearly the same summer temperature of 69° or 70° of Fahrenheit's scale. The lines of equal winter temperature decline in an opposite direction, and deviate much farther from the plane of the parallels. Thus a straight line drawn from Edinburgh to Milan, almost exactly at right angles to the line of equal summer temperatures, would pass over places, all of which, if equally elevated, would have nearly the same winter temperature of 37° or 38°. The other lines of equal summer and winter temperatures have a direction corresponding to these, but not exactly parallel.

On comparing the climate of the two hemispheres, we find that the southern is rather colder than the northern, but is more remarkably distinguished by the greater equality of its seasons. This last effect may obviously be referred to the influence of a greater surface of sea upon a smaller extent of land. In the southern hemisphere also, the temperature seems more uniform under different meridians. At Port Jackson, Buenos Ayres, and the Cape, all nearly under one parallel, the annual mean temperature is almost exactly the same.

The second general cause that affects the temperature of places is their *elevation above the level of the sea*. The formula in page 74 explains the law of this decrease of temperature according to elevation, and shows, in near consistency with fact, that as we ascend, the rate is not the same at different latitudes, nor uniform at the same place for equal successive altitudes.

At the equator, for instance, the thermometer is found to sink 10° in the first thousand yards of ascent, or 1° for 310 feet. In the next thousand yards it sinks no more

than 6°, or 1° for 524 feet. In the third and fourth stages, there is a remarkable acceleration. In the whole column of air to the limit of perpetual snow, at 15,965 feet of elevation, the decrease is 1° for 341 feet. In the temperate zone the atmospheric cold increases more rapidly. Observations made in the free regions of the air, may give different results from those which were made on the sides or summits of mountains. But generally in the temperate zone, of two adjacent places, if the one is 1000 yards higher than the other, it will have a climate 12° colder. For smaller heights the decrease is proportional. In the upper regions of the atmosphere, the difference between the heat of night and day, summer and winter, is smaller than at the surface of the earth. This law of decrease explains the extreme cold felt in the elevated plains of Siberia, and the mild temperature enjoyed in the torrid zone, on the table land of Mexico, the plateau of Pastos, and other high lands.

The subjoined table, calculated from the formula already referred to, gives the height of the line of congelation at different latitudes: —

Latitude.	*Mean Temperature at the Level of the Sea.*		*Height of Curve of Congelation.*	*Latitude.*	*Mean Temperature at the Level of the Sea.*		*Height of Curve of Congelation.*
	Centigrade.	*Fahrenheit.*	*Feet.*		*Centigrade.*	*Fahrenheit.*	*Feet.*
0	29°.00	84°.2	15207	46	13.°99	57.°2	7402
1	28.99	84.2	15203	47	13.49	56.3	7133
2	28.96	84.1	15189	48	12.98	55.4	6865
3	28.92	84.0	15167	49	12.43	54.5	6599
4	28.86	83.9	15135	50	11.98	53.6	6334
5	28.78	83.8	15095				
6	28.68	83.6	15047	51	11.49	52.7	6070
7	28.57	83.4	14989	52	10.99	51.8	5808
8	28.44	83.2	14923	53	10.50	50.9	5548
9	28.29	82.9	14848	54	10.02	50.0	5290
10	28.13	82.6	14764	55	9.54	49.2	5034
				56	9.07	48.3	4782
11	27.94	82.3	14672	57	8.60	47.5	4534
12	27.75	82.0	14571	58	8.14	46.6	4291
13	27.53	81.6	14463	59	7.69	45.8	4052
14	27.30	81.1	14345	60	7.25	45.0	3818
15	27.06	80.7	14220				
16	26.80	80.2	14087	61	6.82	44.3	3589
17	26.52	79.7	13947	62	6.39	43.5	3365
18	26.23	79.2	13798	63	5.98	42.8	3145
19	25.93	78.	13642	64	5.57	42.0	2930
20	25.61	78.1	13478	65	5.18	41.3	2722
				66	4.80	40.6	2520
21	25.28	77.5	13308	67	4.43	40.0	2325
22	24.93	76.9	13131	68	4.07	39.3	2136
23	24.57	76.2	12946	69	3.72	38.7	1953
24	24.20	75.6	12755	70	3.39	38.1	1778
25	23.82	74.9	12557				
26	23.43	74.2	12354	71	3.07	37.5	1611
27	23.02	73.6	12145	72	2.77	37.0	1451
28	22.61	72.7	11930	73	2.48	36.5	1298
29	22.18	71.9	11710	74	2.20	36.0	1153
30	21.75	71.1	11484	75	1.94	35.5	1016
				76	1.70	35.1	887
31	21.31	70.3	11253	77	1.47	34.6	767
32	20.86	69.5	11018	78	1.25	34.2	656
33	20.40	68.7	10778	79	1.06	33.9	552
34	19.93	67.9	10534	80	.87	33.6	457
35	19.46	67.0	10287				
36	18.98	66.2	10036	81	.71	33.3	371
37	18.50	65.3	9781	82	.56	33.1	294
38	18.01	64.4	9523	83	.43	32.8	226
39	17.51	63.5	9263	84	.32	32.6	167
40	17.02	62.6	9001	85	.22	32.4	117
				86	.14	32.3	76
41	16.52	61.7	8738	87	.08	32.2	44
42	16.02	60.8	8473	88	.04	32.1	20
43	15.51	59.9	8206	89	.01	32.0	5
44	15.01	59.0	7939	90	·00	32.0	0
45	14.50	58.1	7671				

The temperature of countries is also affected by the *proximity of the sea,* and the *nature of the adjacent land.* The extremes of temperature are always comparatively little felt in small islands, remote from continents. In the United States, intense cold is experienced as often as the wind blows from the frozen plains round Hudson's Bay. From high mountains, gusts of cold wind, called *snow winds* by mariners, rush down and cool the circumjacent plains. At Calabozzo, in Venezuela, the temperature, which was from 87° to 90° in March, rose to 104° or 105°, whenever the wind blew from the parched and dusty surface of the Llanos, or great plains. The heat accumu-

lates to an astonishing degree, when the wind passes over extensive deserts of fine and almost impalpable sand, which rises in the air, and hangs over the surface like a fog, or mounts in whirling columns to a great height, mixing its burning particles with the mass of the atmosphere, and communicating to it an intolerable heat. In Europe, where the proximity of the sea cools every part of the surface by the agency of the winds, the accumulation of heat never proceeds so far as in Asia and Africa. Even in low plains, sheltered on the north, the temperature scarcely ever exceeds 100°: but at Bagdad and at Bushire, where the south wind arrives heated by the burning sands of Arabia, the thermometer sometimes stands at 120°, or 125°; and on the west coast of Africa, where similar causes operate, it is said to rise to 130°. Perhaps the hottest summer climate in the world is to be found in the western parts of the Sahara of Africa, under the northern tropic, where the winds blow over a zone of sandy plains 4000 miles in breadth, unbroken by any considerable mountains, or by any surface of water except the narrow inlet of the Red Sea. At the sametime, it is possible that a much narrower surface than this may suffice to communicate the maximum effect of the solar heat to the atmosphere, and the actual heat generated may depend more upon the nature of the surface and its low elevation, than upon its extent.

It appears that within the tropics seas have very little effect in tempering the accumulating heat of the land, when situated to the westward of a continent, but a great effect when situated to the eastward. In the plains of Caraccas, which are open to the sea on the east, the heat rarely exceeds 99°, but even in the wooded regions of Senegambia and Guinea, much nearer the coast, it rises to 130°. In the temperate zones, on the other hand, it is clear that the sea exerts its influence in a direction precisely contrary. When the land lies to the eastward, the sea mitigates the extremes of heat and cold very much; when to the westward very little. This is abundantly proved by the difference of temperature between the east and west coasts of the two continents. Now, the sea can exert very little influence over the temperature of the land, except through the agency of the atmospheric currents; and the phenomena in both cases seem to be accounted for by the prevailing direction of the winds. Within the tropics, these are almost constantly from the east; but from the tropics to the latitude of 60° north (and probably much farther), the prevailing winds are from the west. Within the torrid zone, therefore, we should expect to find the extreme summer heat constantly accumulating from the east side of continents and islands to the west; but in the temperate zones, the extremes both of heat and cold will as regularly increase from the west to the east. This is found to be the case, and whatever other causes may be conjoined with those now assigned, there can be no doubt that the latter have really a great influence.

The temperature of each zone has such a correspondence with the amount of the solar impressions, as to lead to the inference, that the heat of the globe is entirely derived *from the sun;* and Professor Leslie has calculated, that, upon this hypothesis, the mean heat of the interior ought to be 66°.8. Humboldt has ascertained, however, that, in latitudes above 45°, the mean heat of springs and caves generally exceeds that of the atmosphere. The difference, which amounts to 6° or 7° at the parallel of 70°, he ascribes to the covering of snow in the higher latitudes, which prevents the loss of heat during the winter months by radiation, or the contact of cold winds. But there are facts which indicate that this heat may be derived from *another source.* To say nothing of volcanoes, we have hot springs in all parts of the world, at all temperatures below boiling water; and evidence still less equivocal is afforded by the high temperature of deep mines. The following are examples: —

At Giromagny, in the Vosges, annual temperature at surface, 49°; at 110 yards depth, 53°.6; at 336 yards, 65°.8; at 472 yards, 74°.6.

In Saxony, in four of the deepest mines, annual temperature at surface, 46°.4; at 170 to 200 yards depth, 54°.5; at 280 yards, 58 ; at 360 yards, 62°.6.

In the coal mine of Killingworth, the deepest in Britain, annual temperature at surface, 48 ; at 300 yards, 70°, at 400 yards, 77°. In seven others of the deepest coal mines in Britain, a corresponding gradation was observed.

In these British mines, the increment of temperature is about 1° for 15 yards of descent. In the Vosges, it is about 1° for 20 yards, and in Saxony, 1° for 22 yards. Taking 20 yards as a mean, if the increase follows the same arithmetical ratio to a considerable depth, we should find the temperature of the Bath waters (116°) at 1320 yards below the surface, and that of boiling water at 3300 yards, or nearly two miles. The frequency of hot springs from the 80° to 120°, the rarity of those that approach the boiling point, and the constancy of temperature in them all, are circumstances remarkably consistent with this hypothesis. The facts strongly support three conclu-

sions; 1*st*, That the heat of an interior shell of the earth is greater than the superficial shell: 2*d*, That this heat augments progressively as we descend towards this region, in a ratio bearing some relation to the depth; 3*d*, That, even at moderate depths, this heat is greater than the mean heat of the globe ought to be, if entirely derived from the sun. The heat of such an interior mass must be constantly diffusing itself towards the surface; and at the surface it may be kept down, so as to affect the temperature derived from the solar action very feebly, by the greater or less rapidity of its dissipation. But as it is very improbable that it should be diffused with perfect equality round the whole exterior shell of the globe, it may be the true source of some of those anomalies of climate (such as the discrepancy in the annual heat under the same parallel) which cannot be easily referred to other known causes.*

III. *Meteorological Phenomena*, or those supplementary phenomena not apparently belonging to the peculiar constitution of the atmosphere, which are partly manifested there, are very various; — we shall now endeavour to arrange them into classes.

1. *Optical phenomena.* The optical appearances of the sky are striking and manifold. When the rays of the sun strike upon a cloud, they are copiously reflected, but partly absorbed by the minute suspended globules. In working their progress through the mass of vapour, they suffer a great diminution from the multiplied acts of absorption. The quantity of light thus finally detained depends on the density of the cloud, and its thickness. But the portion which penetrates through the nebulous medium is always much less than what traverses an equal body of air. In extreme cases, perhaps, the solar beams will suffer greater defalcation by repeated repercussions within a congregated cloud, than from passing through fifty times the same extent of a clear aërial expanse. Hence such clouds always appear dark and black, by their scanty transmitted light. Whiteness, being produced by the copious emission of intermingled rays, can belong only to very thin clouds. The depth of shade indicates the mass of floating vapour. Owing to the excessive minuteness of the aqueous globules, the particles of light are only reflected or absorbed at their external surface, without entering them. But when they collect into large drops, the luminous pencil which strikes at a certain angle converges by refraction to a point of the posterior surface, and, after suffering one or more interior reflections, it emerges dissected into its primitive colours. Hence the glorious vision of the rainbow, which was reduced to mathematical calculation by Descartes, but only received its complete explication from the optical discoveries of Newton. The phenomena occur whenever the sun shines upon the falling drops of rain behind the spectator, the coloured arch being a portion of a circle whose centre is a point in the sky directly opposite to the sun. The primary or interior bow is formed by a single reflection, and lies 45° degrees beyond that centre; but the secondary or superior bow, produced by a double reflection, appears with inverted tints at the distance of 56°. A ternary bow may exist, but being so extremely faint from the repeated reflections, it is scarcely ever perceived. It hence follows, that rainbows are only visible when the altitude of the sun is below 45° and 56°. In summer, accordingly, they are not seen in this climate about the middle of the day. For the same reason, they generally appear less than a semicircle; but viewed from the top of a spire, or any lofty pinnacle, they embrace nearly the whole circumference. Lunar rainbows may be frequently observed, only the faintness of their colours makes them far less conspicuous. The coloured rings or *halos* which are often seen surrounding the moon and sun, are evidently occasioned by very thin vapour diffused through the atmosphere. They are supposed chiefly to encircle the moon; but, in this climate, hardly a day passes with light fleckered clouds, when at least portions of halos may not be perceived near the sun. It is only necessary to remove the glare of light which makes the delicate colours appear white. Thus, if we examine the reflection from a smooth surface of water, we shall perceive that the sun gilds the fleecy clouds with segments of beautifully coloured rings. This effect is still more distinctly seen if the rays from a hazy or mottled sky be received upon a sheet of white paper, held before a small hole in the window-shutter of a dark room. But even when the sun shines from an azure firmament, circles of the richest tints may be produced by experiment. Holding a hot poker below, and a little before, the small hole of the shutter, throw a few drops of water upon it, and the sun will be painted

* As nearly the whole of the preceding view of climate has been taken from Humboldt's excellent *Essay on Isothermal Lines, and the Distribution of Heat over the Globe*, particular references were not thought necessary. The English translation, given in the *Edinburgh Philosophical Journal*, No. 5-9, has been consulted.

upon the paper like the glowing radiations of the *passion-flower*. The appearance is exactly similar to what the traveller, in awakening from a short slumber, perceives, in a winter's morning, on opening his wearied eyes to a burning candle—concentric rings of violet, green, yellow, and red. The explication usually given of the cause of halos, and also that proposed by Newton himself, is inadmissible; since it would confine them, like the rainbows, to certain definite limits, whereas they appear with every possible degree of extension. The origin of halos must be sought in the *deflection* of light, or that property of the rays to bend and divide as they pass near the edge of a body. Thus the light admitted through a very narrow slit in a card, or a bit of tinfoil, spreads into bright coloured fringes. The finer also is the slit, the broader are the fringes. A similar appearance is obtained by looking at the elongated flame of a candle through the delicate fibres of a feather, or even through the streaks of grease rubbed by the finger along a piece of glass. But if a very small round hole be substituted for the slit, the fringes will change into coloured rings. Thus, if a piece of tinfoil, punctured with the point of a needle, be held close to the eye, the sun will appear through it surrounded by a halo very near his disc, but spreading more in proportion as the hole is contracted. It may be stated, as an approximation, that the globules of the diffuse vapour which, by a similar *exterior* deflection of the solar rays, occasion the appearance of coloured circles about the sun and moon, vary from the 5000th to the 50,000th part of an inch in diameter. When the halo approaches nearest to the luminous body, the largest globules are floating, and therefore the atmosphere is surcharged with humidity. Hence the justness of the vulgar remark, that a dense halo close to the moon portends rain. The late Dr. Thomas Young gave perhaps the only true account of the origin of the *parhelia* or *mock suns*, which are frequently seen in the arctic regions during certain dispositions of the atmosphere. This gorgeous appearance of intersecting luminous arches, studded with opposite and transverse images of the sun, he ascribes to the combined reflections of the rays from the natural facets of the snowy *spicula* floating abundantly in the air. Another most remarkable optical deception occurs in a peculiar state of the atmosphere on the verge of the horizon in various countries, and especially in the warmer climates, whether on the level plains, or on the margin of rivers or lakes, and near the sea-shore. In such situations, the remote objects often appear with extraordinary elevation, and in double or inverted images. This singular phenomenon is obviously caused by the irregular refractions which the rays of light occasionally suffer by passing through the different strata of the lower atmosphere. When the effect is confined to the apparent elevation of an object, our seamen call it *looming;* but if inverted images be formed, the French and Italians give to this play of vision the appellations of *mirage* and *fata morgana*.

2. *Electric phenomena.* Of all *igneous* meteors, *lightning* unquestionably occupies the first rank. It is universally known as the effect of electricity; the theory of which must be studied in philosophical treatises. The electric *fluid*, as it is termed, appears to pervade all nature; its presence and influence has been detected during the phenomena of rain, snow, hail, &c. in the clouds, during vegetation, and among the strata of the interior of the earth. On a disturbance of its equable diffusion, or state of equilibrium, the bodies unequally affected tend to return to that condition by a discharge, which appears in the form of a spark or flash of lightning, and the violence of which is indicated by a detonation often echoed and re-echoed among the piles of clouds. Sometimes we observe the flash descending from the clouds to the earth; at other times it ascends from the earth to the affected region of the air. This flash, which is attracted and conducted by metals and moist bodies in preference to other substances, commits ravages, which, from our inability to observe them with coolness, still remain partially obscure: here the lightning kindles rapid and devouring flames; there it bends and shivers the objects it meets with. Sometimes it instantaneously deprives animals of life, and sometimes passes over the clothes without injuring the person. A kind of periodical flux and reflux has been observed in the electrical fluid in the atmosphere. In summer, when the earth is dry and the day warm, droughty, and severe, the atmospheric electricity increases from sunrise till mid-day, when it arrives at a *maximum;* then it remains stationary for a couple of hours, and afterwards diminishes until the fall of the dew. Towards midnight it revives, to be again almost entirely extinguished. In winter, the maximum of electricity is at eight o'clock in the morning and at eight o'clock in the evening; it is weaker during the day. Electrical phenomena are more prevalent in some quarters of the globe than in others. Towards the poles, thunder is rarely heard, and only as a weak decrepitation; whereas at the equator there is a vast extent both of land and sea where such storms almost constantly prevail. Notwithstanding the calamities which these storms frequently

occasion, and which the thunder-rod cannot infallibly prevent, they are not unproductive of benefit. They diffuse freshness through an atmosphere formerly confined and sultry; the plants resume their lively green, the flowers raise their drooping heads when their thirst has been quenched by the rain; the crops and fruit, penetrated by a new warmth, ripen more rapidly, and man adores anew the Great Being whose power has been displayed.

3. *Meteors.* Of meteors, properly so called, there are several classes.

Ignes fatui, or those lights which flutter at night on the surface of marshes, over churchyards and fields of battle, arise from the spontaneous ignition of a gas composed of hydrogen and phosphorus, which is emitted by animal matter in a state of putrefaction. This gas always inflames on its first contact with the oxygen of the atmosphere.

In the farther regions of the air, shines the *aurora borealis*, that brilliant light whose aspects belong rather to the painter and the poet, than to the rigorous and sober descriptions of science. In our European countries the aurora appears uniformly in the north, inclining generally somewhat to the west; in Greenland, however, it is sometimes perceived towards the south, and in the other hemisphere it shines with a feeble lustre in the direction of the south pole. In latitudes north of 50°, it commences generally three or four hours after sunset, and is preceded by a sombre cloud nearly resembling the segment of a circle, of which the horizon forms the cord. This segment seen at Upsal, for instance, is of a deep black, whilst in Lapland it is greyish, and sometimes invisible. The circumference of the cloud very soon appears bordered with a whitish light, which sometimes seems to fade gently away. Most frequently the dark segment opens in chinks, whence issue streams and rays of light of a yellow, a rose, a purple, or a sea-green colour. A general movement agitates all the cloudy and enlightened space; rays, becoming more and more bright, shoot across each other, like lightning flashing in the midst of effulgent splendour; by degrees there is formed in the zenith a luminous crown, which seems to be the central point of all the motions of the luminous matter. After having occupied, for the space of an hour or two, almost the entire expanse of the heavens, the phenomenon contracts itself first on the southern side, afterwards on the west and the east, and finally disappears towards the north, fading before the rising sun. The description now given applies to the auroia in its full magnificence; the farther we retire from the pole, the less distinctly are these various aspects visible. The *situation* of auroral phenomena is unquestionably the higher regions of the atmosphere; their *cause* is still involved in that obscurity which shrouds all departments of meteorology.

Still more remote is the region of the *zodiacal light.* This grand phenomenon presents itself after sunset, under the appearance of a serene whitish clearness of a lenticular form, having its face turned towards the sun, and its axis in the zodiac. It is seen constantly at the equator, but in other zones only in the most favourable seasons; in our latitudes it chiefly appears about March and April Many hypotheses have been started in regard of this light, but the most probable is, that it is a hazy mist surrounding the sun, of the nature of the halo around the nebulous stars; and if that halo be, as is now commonly believed, connected with the most extraordinary phenomenon in the heavens — diffused nebulosities, the zodiacal light may yet yield important illustrations of the whole planetary cosmogony.

Falling Stars, or *Meteorites*, appear to lead us into spheres still more distant, and far wider speculation. We see them in the form of small globes traversing the vault of heaven in curves, and they occur on any clear night. Until lately, these objects were accounted purely atmospherical phenomena, and described as the inflammation of hydrogen gas, &c.; nor did the fact of the actual fall of *stones*, in some instances, deter speculators from this solution, farther than by inducing some of them to place the meteors which produced stones into a separate class, and to refer them to the volcanoes of the moon. Since the year 1833, however, new views have opened. Various observations concur in shewing that towards the middle, or 13th of November, at a small distance from the stars β and γ of the constellation Leo, a remarkable quantity, amounting to a *shower* of shooting meteors, are produced. Now the periodical occurrence of this phenomenon, at a definitive season of the year, seems to connect it with the earth's position in its orbit; in other words, it converts such meteors into *astronomical* phenomena. The celebrated ARAGO supposes that a train of nebulous matter, containing millions of small globes, may sweep around the sun, and that the orbits of that matter and of the earth cross each other at the point or season referred to. It is far from unlikely that the cause will ultimately be found in some such grand phenomenon; but it would be premature to dogmatize until the activity of observers has fully cleared up all question as to *fact.*

This is the fittest place in which we can refer to *terrestrial magnetism*. Although remarkable relations have recently been established between the electric and magnetic agencies, the real nature of the phenomenon now alluded to is very little understood; and it is perhaps that portion of physical science in regard of which observation and experiment are most urgently required. The polarity of the magnetic needle, and the fact of its variation, have long been known, and of vital importance to mariners. We have still no adequate theory of these variations, which seem to have great secular periods; but multiplied observations have given us a tolerably exact knowledge of their existing condition, of which maps have been published. Besides the variation, the needle has also considerable diurnal oscillations. It were needless in a work like this to enter farther on such a subject; though we cannot avoid remarking, that the discoveries in this part of philosophy in regard of the variations and oscillatory movements referred to, will certainly conduct to unexpected truths concerning the physical structure of the crust of our globe.

CHAPTER IV.

PHYSICAL GEOGRAPHY, IN RELATION TO ORGANIZED BEINGS; OR THE GEOGRAPHICAL DISTRIBUTION OF VEGETABLES, OF ANIMALS, AND OF THE HUMAN RACE.

§ 1. *On the Geographical Distribution of Vegetables.*

Having examined the solid, liquid, and aeriform parts of the terrestrial globe, we shall now proceed to the consideration of those innumerable living beings which cover its surface. In doing so, we shall in the first place notice vegetable productions, both on account of their intimate connection with the soil, and the abundance in which they are produced. It is for the botanist to examine in detail the treasures of the vegetable kingdom,—the business of the physical geographer is only to mark its general arrangements. In the following observations, we propose to treat of botanical geography in its more enlarged and general sense, and shall afterwards, when speaking of different countries, point out the most important productions of their respective regions.

Vegetation embraces the whole extent of the globe, from one pole to the other, from the summit of the Andes, where the lichen creeps over the hardest rocks, to the very bosom of the ocean, where we meet with floating meadows of sea-weeds. Heat and cold, light and shade, fertile lands and desert plains, every place and every temperature, has its own peculiar vegetation. Palms, tree-ferns, and the parasitical orchideous plants, are confined to the tropics; cruciferous and umbelliferous plants are almost exclusively found in temperate regions; while the coniferous, and many of the amentaceous tribes, flourish in more northern countries. Plants belonging to the cryptogamous class grow even upon the dark vaults of caverns, and upon the walls of the deepest mines. The temperature of the air seems to be the chief agent in limiting the range of any vegetable species. Hence the scale of atmospherical temperature serves as a scale for the progress of vegetation. In the burning climate of the torrid zone, we have only to ascend the mountains to enjoy the fruits and flowers of temperate regions. Tournefort found at the foot of Mount Ararat the ordinary plants of Armenia; a little way up, those of Italy; higher again, those which grow about Paris; afterwards the Swedish plants; and higher still, those of Lapland. Forster saw several of the plants of the Alps on the mountains of Tierra del Fuego. While the vallies of the Andes are adorned with bananas and palm-trees, the more elevated regions of that chain are covered with oaks, firs, barberries, and a number of genera common in the north of Europe.

The degree of heat and light necessary for the growth of different vegetables is very various. Some plants of the confervæ tribe, as a species of green laver, live in hot springs, at the temperature of boiling water; whilst others, such as the red snow plant *(protococcus nivalis)*, vegetate amidst the perpetual snow of high mountains, or of the Arctic regions. Numerous cryptogamous plants thrive in situations where the rays of the sun never penetrate. Vigorous beech-forests are found covering the slopes of the Himalaya chain, at a height considerably greater than that of the summit of Finsterhorn, and there also shrubs grow in situations more elevated than the top of Mont Blanc; whilst, on the other hand, numerous sea-weeds send forth their fronds from the very abysses of the ocean. The difference of pressure, temperature, and light, in these instances, must be very great. The absence of moisture seems to oppose the most formidable obstacle to the growth of plants. In confirmation of this, we have only to look to those sandy deserts under the equator and towards the pole, where scarcely a drop of rain falls, and where not even a blade of grass can be seen. The mountains of the torrid zone, present often, from their base to their summit, the plants which are met with from the equator to the poles. We have been able also to cultivate, in our stoves, according to the temperature, the degree of moisture, and the nature of the soil which we employ, a vast number of plants indigenous in all climates. The geographical differences which vegetables present, depend, then, almost entirely on the different degrees of heat, light, and moisture, which they receive, as well as on the nature of the soil whence they derive nourishment, and the influence of various atmospherical phenomena which are constantly occurring. There exists, however, a great number of plants, such as chiccory, wild sorrel, and cresses, which ac-

commodate themselves to all climates and to all localities, extending from Siberia and the frozen shores of Hudson's Bay, to those blissful islands which are scattered over the Pacific Ocean.

The dissemination of the seeds of plants over the surface of the earth is effected by four causes; water, wind, animals and man. The first of these is chiefly concerned in the propagation of aquatic plants, and those found on the sea-shore; the second, in the dissemination of cryptogamous species; and the two last, in the distribution of phænogamous plants in general. Plants may be naturalized wherever the temperature and other atmospheric phenomena are similar to those of the countries in which they are indigenous. We must not, however, allow too much latitude to the operation of these dispersing causes. The pretended migrations of plants have been greatly exaggerated. It has been stated, for example, that Europe received wheat and barley from Tartary, the walnut-tree from Persia, the olive from Syria, and the vine from the borders of the Caspian Sea; in short, historical proofs have been accumulated to show that almost all our useful plants have been brought from Asia. The observations of the ancients, however, on this subject refer only to the *cultivation* of a plant, and not to its origin. Lucullus, without doubt, was the first who brought from Cerasus, in Pontus, the cherry-trees since cultivated in Italy; but in relating this fact, Pliny tells us, that Lusitanian cherries were the most esteemed in Belgic Gaul, and that Macedonia produced a particular kind. He would not have spoken in this manner, had the cherry-trees of Macedonia and Lusitania been propagated from those of Pontus. The same author, however, seems to allow that the vine was indigenous to Gaul. Ancient traditions concur in ascribing the first cultivation of wheat to Sicily or to Attica. A kind of rye, known under the Celtic name of *arinca*, was a native of Gaul. These examples are sufficient to show that some of the farinaceous plants may be considered as indigenous in Europe.

The migrations of man, however, have had a wonderful influence on the geographical extension of plants. By him the coffee-tree has been carried from Arabia to the West Indies, and the potato from America to Europe. The accidental introduction of seeds into a bale of merchandise, has been the means of spreading many plants. In this way, some of the vegetable productions of Brazil have been transplanted into Portugal, and perhaps afterwards conveyed thence to Britain. In the dissemination of plants, there are several peculiarities which are easily accounted for. Some plants appear to live in society, and occupy exclusively large tracts of ground, from which they banish all other vegetables. Others are confined to one side of our planet. This is more especially the case with the species of the genus erica or heath, which extend from the Pole to the Cape of Good Hope, over a surface very narrow compared to its length. Some plants are propagated in the direction of the longitudes, and do not extend either to the right or the left. Thus, the two-coloured phalangium (*Phalangium bicolor*), according to Mirbel, begins to appear on the plains of Algiers, passes into Spain, crosses the Pyrenees, and ends in Brittany. The Irish menziesia (*Menziesia polifolia*), is found in Portugal, the south-western extremity of France, and in Ireland. The Pyrenean ramonda, (*Ramonda pyrenaica*), follows the valleys in the Pyrenees, which run from north to south, and there is not a single specimen of it to be found in the lateral valleys.

We see at other times singular leaps in the distribution of plants. The oak, the wild-nut, and the apple-tree, which are common in Europe, disappear towards the Uralian Mountains, and are not met with from the Tobol to Daouria. The two first of these trees, however, reappear suddenly on the banks of the Argoun and the Amour, and the last occurs anew in the Aleutian Islands.

Botanical geography is not yet in a sufficiently advanced state, to enable us to give an accurate account of the number of species, genera, and families of plants in the different regions of the globe. Willdenow, in his *Species Plantarum*, describes nearly 20,000 species of phænogamous plants, and if to these we add 7000 or 8000 cyptogamous plants which have been described, and 25,000 or 30,000 different species which have been recently discovered, we shall find that the number of plants at present known amounts to nearly 60,000.

Humboldt and Brown have given the following account of the numerical distribution of plants in different countries. In Europe, 7000; in the temperate regions of Asia, 1500; in the warmer regions of Asia and the neighbouring islands, 4500; in Africa, 3000; in North America, 4000; in South America, 13,000; in New Holland, and the islands of the South Sea, 5000. To these must be added numerous marine plants which are as yet little known, and a great variety of vegetable species which have been discovered since Humboldt and Brown's calculation was made. The view

which has been given, however, sufficiently shows the small extent of our knowledge in regard to this subject; for Europe, which presents a surface much smaller than that of many of the countries mentioned, and which cannot boast of the same luxuriant vegetation as is met with in the tropics, but which has been traversed by botanists in all directions and for many years, appears, in this arithmetical distribution, to be richer than Africa and Asia, the extent of which is twice and four times as great as that of Europe. An obstacle to finding the correct number of species, is the want of correspondence among botanists as to the meaning of the terms *species* and *varieties*. Some have multiplied the number of species to an unreasonable amount, by recognising as such all plants which do not present rigorously the characters of the types described by preceding authors; others, falling into the opposite extreme, have united plants which are separated by most botanists, and have thus reduced their real number, without any philosophical reason. If we reflect that the vast continents of Asia and America have not yet been fully explored by botanists, and that the whole of the interior of Africa, of Australia, and the large islands of Oceanica, is as yet unknown alike to the geographer and the naturalist, we can easily suppose that the number of species existing on the globe may amount to nearly double those already known.

The number of known vegetable families differs in different latitudes and in different places. In going from the poles to the equator, we find the number of the *Malvaceæ* or mallow tribe, *Euphorbiaceæ* or euphorbium tribe (including the spurge, castor and croton oil plants, &c.) and *Compositæ* or compound flowers, such as dandelion, daisy, &c. increase. The *Labiatæ* or labiate plants, such as mint, thyme, &c.; *Umbelliferæ*, such as hemlock, parsley, &c.; *Amentaceæ*, such as the birch, willow, &c.; and *Cruciferæ*, such as wallflower, cresses, &c. seem to belong to temperate zones. The last disappear entirely in the torrid zone. The greater part of the European *Orchideæ* (including the various species of orchis), are found only in shady and moist woods; while the saxifrages, primroses, and gentians, prefer calcareous hilly districts.

If we examine the distribution of the great classes of the vegetable kingdom over the globe, we shall find, that cryptogamous plants, such as mosses, lichens, mushrooms, sea-weeds, &c. are to phænogamous, or common flowering plants, in the proportion of 1 to 7. These same tribes in equinoxial countries are in the proportion of 1 to 5; in New Holland or Australia, as 2 to 11; in France, as 1 to 2; while in Lapland, Greenland, Iceland, and Scotland, they are in nearly equal proportion,

Monocotyledonous plants, or plants having only one cotyledon in the seed, such as grasses, lilies, palms, &c., over the whole surface of the known globe are to dicotyledonous, or those having two cotyledons, as the majority of our common trees, &c., as 2 to 9; from the equator to the 30th degree of north latitude, as 1 to 5. In proportion as we retire from the equator, the number of dicotyledonous plants diminishes; so that it is a half less at the 60th degree of north and the 50th degree of south latitude. We have not, however, as yet collected a sufficient number of facts in regard to this subject to establish any general rules which will be applicable to all countries.

What has already been said will show the difficulties to be encountered in determining with accuracy the regions of botanical geography. The partial attempts made by Tournefort, Linnæus, Adanson, Saussure, Soulavie, Ramond and Young, and the much more important labours of Stromeyer, Treviranus, Leopold Von Buch, Wahlenberg, Hornemann, and more particularly those of Humboldt, De Candolle and Brown, have furnished facts and principles upon which M. Schow has been able to found a botanical geography of the globe. But although the valuable essay of this able naturalist has done much to promote the progress of this part of botanical science, innumerable observations are still required in order to render it complete.

As the *station* and *habitation* of plants are the first elements of this new science, we shall, in the first place, define the meaning of these terms. We shall then give a view of the principal stations of vegetables according to M. De Candolle; and having defined what M. Schow means by a *phyto-geographical kingdom* or *region*, and by a *botanical province*, we shall notice the different countries which form the 22 regions into which M. Schow has divided the whole surface of the globe.

By *station*, we mean the physical nature of the locality in which each plant grows. It is connected with the exposure, the nature of the soil, the height above the level of the sea, the temperature, and the other causes which influence the distribution of vegetables; so that the station of a plant is a sort of result produced by the varied combination of all the influences of physical agents. By *habitation* we mean the region or part of the globe in which each species is most common.

It would be easy to make a considerable number of divisions among vegetables, by considering them according to the stations which they affect. M. De Candolle has

reduced them to fifteen classes, to which M. Bory de Saint Vincent has added two others. The following are the divisions adopted by these authors.*

1. Maritime or saline plants. These are terrestrial plants which grow on the border of the sea or of salt lakes ; as *salicornia* or saltwort, *salsola* or glasswort, and some species of *statice* or sea-pink, &c.
2. Marine plants, such as seaweeds, lavers, &c. which are either buried in the ocean or float on its surface
3. Aquatic plants, growing in fresh water, either stagnant or running ; as *sagittaria* or arrowhead, *nymphæa* or white water-lily, *potamogeton* or pond-weed, &c.
4. Marsh or swamp plants, living in ground which is generally submerged, but occasionally dry ; as *ranunculus aquatilis* and *sceleratus*, or water and celery-leaved crowfoot ; *polygonum amphibium* or amphibious persicaria, &c. The form of the plants varies according to the degree of moisture.
5. Meadow and pasture plants ; as some species of *lotus*, or bird's-foot trefoil, a great number of grasses, trefoils, &c.
6. Plants found in cultivated fields. In this division are included many plants which have been introduced by man along with grain ; as *centaurea cyanus*, corn blue-bottle ; *sinapis arvensis*, or common wild mustard ; *agrostemma*, corn-cockle; several species of *veronica*, or speedwell ; *euphorbia*, or spurge, &c.
7. Rock or wall plants ; as saxifrages, wall-flower, some species of *sisymbrium* or hedge-mustard, and *bromus*, or brome-grass ; *linaria cymbalaria* or ivy-leaved toadflax, &c.
8. Sand plants ; as *carex arenaria* or sea-carex, and *calamagrostis arenaria* or sand small-reed, which tend to fix the loose sand ; *plantago arenaria*, sand plantain, &c.
9. Plants found on rubbish, or those which select the habitations of man and animals, on account of the salts and azotised substances which enter into their composition ; as pellitory of the wall, nettles, and some mushrooms, &c.
10. Forest plants, including trees which live in society, as the oak, the beech, firs, &c. and the plants which grow under their shelter, as the greater part of the European orchises, some species of carex, broom-rape, &c.
11. Plants of the thickets or hedges, comprehending the small shrubs which constitute the hedge or thicket, as the hawthorn and sweet-briar, &c., and the herbaceous plants which grow at the foot of these shrubs, as tuberous moschatell, wood sorrel, violets, &c., or those which climb among their numerous branches, as bryony, black bryony, some species of everlasting pea, &c.
12. Subterranean plants, or those which live in mines and caves, almost entirely excluded from the light, as *byssus*, truffles, and some other cryptogamic plants.
13. Plants of the mountains, which M. De Candolle proposes to divide into two sections : 1. Those which grow on alpine mountains, the summits of which are covered with perpetual snow, and where during the heat of summer there is a continued and abundant flow of moisture, as numerous saxifrages, gentians, primroses, rhododendrons, &c. ; 2. Those inhabiting mountains on which the snow disappears during summer, as several species of snap-dragon, among others the alpine snap dragon, umbelliferous plants, chiefly belonging to the genus *seseli* or meadow saxifrage, labiate plants, &c.
14. Parasitic plants, which derive their nourishment from other vegetables, and which, consequently may be found in all the preceding situations ; as the misletoe, broom-rape, dodder, and a number of ichens, mushrooms, mosses, &c.
15. Pseudo-parasitic plants, which live upon dead vegetables, as lichens, mosses, &c., or upon the bark of living vegetables, but do not derive nourishment from them, as *epidendron*, &c.
16. Plants which vegetate in hot springs, the temperature of which ranges from 80 to 140 or 150 of Fahrenheit's thermometer ; as *vitex agnus castus*, and several cryptogamous plants, as the hot-spring laver, (*ulva thermalis*,) &c.
17. Plants which are developed in artificial infusions or liquors. Among others, we mention a conferva, or sort of mould found in Madeira wine.

To cultivated plants, which have become naturalized in fields and gardens by the hands of man, we cannot assign any station or region. The greater part of them follow everywhere the human footsteps, and their native country is almost always involved in the greatest obscurity.

In general, we may say that the station of the plant above the level of the sea, varies the more that its ordinary habitation approaches to the climate of the temperate zones. Plants which grow in all latitudes also grow at all heights, and plants which only grow in a particular latitude, are found at a height above the level of the sea where the temperature corresponds to that of the latitude.

Professor Schow, in his general botanical division of the globe, characterises the regions by the most remarkable feature of their vegetation, adopting commonly used geographical terms only where he conceives that a certain division of the earth ought to constitute a distinct region, but is not sufficiently acquainted with its productions to determine and define their forms. In order that any portion of the globe may form what he proposes to call a *phyto-geographical region*, it is necessary that at least one half of the species should be indigenous in it ; that a quarter of the genera should also be peculiar to it, or at least should have there a decided maximum, so that their congeners in other climates should only appear as their representatives ; and finally, that individual families of plants should either be exclusively confined to the region, or have their *maxima* there. He does not, however, regard this last condition as absolutely essential, provided the two others are fulfilled. Slight degrees of difference in the vegetation characterise the divisions or provinces of a region or kingdom ; he considers a quarter of the species and some genera sufficient to determine them.

The following are the twenty-two botanical regions or kingdoms into which Professor Schow divides the globe : —

1. The Region of Saxifrages and Mosses, or the Alpine Arctic Flora. This region is characterised by the abundance of mosses and lichens, the presence of the saxifrages, gentians, chickweed-tribe, sedges and willows ; the total absence of tropical families ; a notable decrease of the forms peculiar

* See Article *Geographie Botanique*, in the *Dictionnaire Classique d' Histoire Naturelle*.

to the temperate zone, of the forests of firs and birches, and an absence of other forests; the small number of annual plants, and the prevalence of perennial species; and finally, a greater liveliness in their simple colours. This region is divided into two provinces: 1. The province of the *Carices* or the Arctic Flora, which comprehends all the countries within the polar circle, with some parts of America, Europe and Asia which are to the south of it, more especially Lapland, the north of Russia, Siberia, Kamschatka, New Britain, Canada, Labrador, Greenland, and the mountains of Scotland and Scandinavia; 2. The province of Primroses and Rampions, or the Alpine Flora of the south of Europe, which embraces the flora of the Pyrenees, Switzerland, the Tyrol, Savoy, &c., the mountains of Greece, the Appenines, and probably the mountains of Spain.

2. The Region of the Umbelliferous and Cruciferous Plants, (to which the hemlock, parsley, wallflower, cresses, &c. belong.) These tribes are here in much greater number than in any other region; roses, crowfoots, mushrooms, amentaceous and coniferous plants, are also very numerous; the abundance of *varices*, and the fall of the leaves of almost all the trees during winter, form also the chief features of this division. It may be separated into two distinct provinces: 1. The province of the *cichoraceæ*, (including the sow-thistle, dandelion, lettuce, &c.) which embraces all the north of Europe, not comprehended in the preceding region, namely, Britain, the north of France, the Netherlands, Germany, Denmark, Poland, Hungary, and the greater part of European Russia; 2. The province of the *astragali* and *cynarocephalæ* (to which the milkvetch, burdock, thistle, &c. belong), which includes a part of Asiatic Russia, and the countries about Mount Caucasus.

3. The Region of the *Labiatæ* and *Caryophylleæ* (to which the pink, catchfly, sandworts, &c. belong,) or the Mediterranean Flora. It is distinguished by the abundance of the plants belonging to these two orders. Some tropical families are also met with, such as palms, laurels, arums, plants yielding balsam and turpentine, grasses belonging to the genus *panicum* or millet, and the true *cyperaceæ* or sedges. The forests are composed chiefly of the amentaceous and coniferous tribes, as birches, oaks, &c., the copses of *ericineæ* or heath tribe, and *terebinthaceæ*, as the mastich, &c.; we meet with a great number of evergreen trees. Vegetation never ceases entirely, but verdant meadows are more rare. M. Schow divides this region into five provinces: — 1. The province of the Cistuses, including Spain and Portugal; 2. The province of the Sage and Scabious, the south of France, Italy and Sicily; 3. The province of the Shrubby *Labiatæ*, the Levant, Greece, Asia Minor, and the southern part of the Caucasian countries; 4. The Atlantic province, the north of Africa, of which he does not yet know any distinctive character; 5. The province of the Houscleeks, the Canary Isles, and probably also the Azorcs, Madeira, and the north west coast of Africa. Many houseleeks, and some spurges with naked and spiny stems particularly characterise this province.

4. The Region of the *Rhamni* and *Caprifoliaceæ* (to which the buckthorn and honeysuckle belong), or the Japanese Region. This region is as yet too little known to enable us to determine accurately its characteristic features. It embraces the eastern temperate part of the old continent, namely, Japan, the north of China, and Chinese Tartary. Its vegetation appears to occupy a middle place between that of Europe, and that of North America, approaching more to the tropical than to the European.

5. The Region of *Asters* and *Solidagos*, (michelmas daisies and golden-rods.) This is marked by the great number of species belonging to these two genera, by the great variety of oaks and firs, the small number of *cruciferous* and *umbelliferous* plants, the total absence of the heath, and the presence of more numerous species of whortleberry than are to be met with in Europe. It comprehends the whole of the eastern part of North America, with the exception of what belongs to the first region. It has been divided into two provinces: — 1. That of the south, which embraces the Floridas, Alabama, Mississippi, Louisiana, Georgia, and the Carolinas; 2. That of the north, which includes the other states of North America, such as Virginia, Pennsylvania, New York, &c.

6. The Region of *Magnolias*, comprising the most southern parts of North America. The tropical forms which show themselves more frequently than on a similar parallel of the old continent, are the chief feature in the vegetation.

7. The Region of Cactuses, Peppers, and Melastomas. These families are here predominant, both as regards the number of the species and of the individual plants. It is divided into three provinces: — 1. The province of the Ferns and Orchises, comprehending the West India Islands; 2 The province of the Palms, the lower parts of Mexico, New Granada, Guiana, and Peru; 3. Brazil also seems to form a province, and may perhaps constitute a region of itself.

8. The Region of *Cinchonæ*, or Medicinal Barks, which comprises a part of the elevated regions of South America, included in the torrid zone. The *cinchona* belongs exclusively to this region and forms its principal feature.

9. The Region of *Escallonias*, Whortleberries and Winter's Barks. It embraces the highest parts of South America. We also meet with alpine plants, as saxifrages, whitlow-grass, sandworts, sedges, and gentians. Perhaps also the mountains of Mexico belong to this region, although they may form a separate province, that of the oaks and firs.

10. The Chilian Region. The Flora of Chili differs essentially from those of New Holland, the Cape of Good Hope, and New Zealand, although an approach to them is observable in the genera, *goodenia*, *araucaria* (Chilian pine), *protea*, *gunnera*, and *ancistrum*.

11. The Region of Arborescent *Compositæ* (or arborescent plants, with flowers like the dandelion, daisy, &c.) The great number of syngenesious plants, more particularly of the family of *boopideæ*, forms the chief feature of this flora, which approaches in a remarkable manner to that of Europe, whilst it differs entirely from those of Chili, the Cape and New-Holland. This region comprehends the lower part of the basin of La Plata, and the plains which extend to the west of Buenos Ayres.

12. The Antarctic Region, formed by the countries near the Straits of Magellan. There is a considerable affinity between the vegetation here and what is seen in the north temperate zone. Polar forms, however, display themselves in the species of saxifrage, gentian, arbutus, and primrose. There is also a resemblance between the flora of this region, and those of the mountains of South America, of Chili, the Cape, and New Holland.

13. The Region of New Zealand. This flora, besides the plants peculiar to New Zealand, comprehends several others which belongs to the extremities of America, Africa, and Australia or New-Holland.

14. The Region of *Epacrides* and *Eucalypti*. It comprehends the temperate parts of New Holland, and Van Dieman's Land. Besides the two families whence it receives its name, it is characterised by the presence of a great number of *protraceæ*, myrtles, *stylideæ*, *restiaceæ*, *diosmeæ*, acacias, &c.

15. The Region of *Mesembryanthema* or Fig Marigolds, and Stapelias. These two genera, as well as the heaths, are very abundant here. The latter family is found in greater quantity here than any where else. It embraces the southern extremity of Africa.

16. The Region of Western Africa. We are only acquainted with Guinea and Congo, the vegetation of which is a mixture of the Floras of Asia and America, though most resembling the former. This region is characterised by a considerable number of grasses and sedges, and the peculiar genus *adansonia*, the baobab, (the largest known tree in the world.)

17. The Region of Eastern Africa. In regard to the eastern coast of Africa, our knowledge is very imperfect. The region is chiefly distinguished by the genera *danais*, *ambora*, *dombeya*, and *senacui*.

18. The Region of the *Scitamineæ*, (of the turmeric, cardamom, Indian shot, &c.) or the Indian Flora.

The *scitamineæ* here are much more numerous than in America, as well as the *leguminosæ*, such as pease, broom, &c. *cucurbitaceæ*, or the cucumber tribe, and *tiliaceæ*, or the lime-tree tribe, although in a less degree. In consequence of the imperfect state of the science, we cannot subdivide this region into provinces. It comprehends India, east and west of the Ganges, the Islands of Madagascar, Bourbon and Mauritius, those between India and New Holland, and perhaps the tropical part of this last continent.

19. The Mountains of India ought to form one or two regions, the vegetation of which differs from that of the plains. These countries perhaps constitute one region with the whole of central Asia.

20. The Floras of Cochin China, Tonquin, and the north of China, notwithstanding their resemblance to that of India, present a sufficient number of peculiar indigenous plants to constitute a distinct region.

21. The Flora of Arabia and Persia, differing from that of India and the Mediterranean, forms a particular botanical region, characterised by the numerous species of *cassia* and *mimosa* (to which senna, the sensitive plant, &c. belong), which are found in it. It appears probable that Nubia and a part of Central Asia belong to it. Abyssinia, the elevated parts of which possess such a different climate, may perhaps form one of the great subdivisions, or even a totally distinct region.

22. The Islands of the South Sea, which lie within the tropics, form undoubtedly a separate region, though with but a slender degree of peculiarity. Among 214 genera, 173 are found in India, and most of the remainder are in common with America. The bread-fruit tree is among the characteristics of these islands, although it is not confined to this region.

Marine plants are also confined to particular regions, from causes analagous to those which limit or favour the extension of terrestrial plants. M. Lamouroux has published a valuable work on their geographical distribution. In the sea as on the land large tracts have each their peculiar system of vegetation. Thus, the northern ocean, from the pole to the 40th degree, the sea of the Antilles, the eastern coasts of South America, those of New Holland, the Indian Archipelago, the Mediterranean, the Red Sea, &c. present so many large marine regions, each of which possesses a peculiar vegetation.

The torrid zone possesses vegetable riches which we cannot expect to naturalize in other regions of the globe. The most succulent and aromatic fruits are there ripened; plants there have more vigour, more variety, and more splendour; the burning rays of the sun in these regions raises the herbaceous plant into a shrub, the shrub into a tree. There are produced those balsams, gums, and juices, which gratify and excite the palate of the voluptuous European, and from thence are derived many of the most valuable remedies for the cure of the ills which afflict humanity. There we find the sugar-cane, the coffee-tree, the palm, the bread-fruit tree, the pisang, the immense baobab, the date, the cacao, vanilla, canella, nutmeg, pepper, and the camphor-tree. In the torrid zone we have, moreover, many trees used for dyeing, and some species of grain which are almost peculiar to it. At the same time, this zone possesses most of the species which thrive under a less burning sun. The plant which vegetates on the plain in Siberia, is found on the highest summits of the mountains under the line, and the sides of the same mountains represent the temperate zone.

Vegetation under the equator presents a most enchanting aspect, and it is there that plants display the most majestic forms. In the same way as the bark of trees exposed to northern frosts is covered with lichens and mosses, so the trunk of the cashew-tree, and the gigantic fig of the tropics, is adorned with the *cymbidium* and the oderiferous vanilla. The fresh verdure of the leaves of the *pothos*, is beautifully contrasted with the variously coloured flowers of the orchis tribe. The mountain ebony, the climbing passion-flower, and the *banisteria* with its golden yellow flowers, twine round the trunks of the forest trees. Delicate flowers grow from the root of the cacao tree, as well as from the thick, rough, and blackened bark of the calebash and the *gustavia*. Amidst this luxuriant vegetation, and this profusion of climbing plants, the naturalist is often at a loss to recognise the trunk to which the leaves and flowers belong. A single tree adorned with *paullinia*, *bignonia*, and *dendrobium*, forms a group of vegetables, which if separated from each other would cover a considerable space. In the torrid zone, plants abound more in juices, and present a verdure more shining, and leaves larger and more brilliant, than in the northern climates. Vegetables which live in society, and which render the aspect of the European plain so monotonous, are not to be found in equatorial regions.

In consequence of the prodigious height to which whole regions are elevated in the tropics, and the cold temperature of that elevation, the inhabitants of the torrid zone, while they are surrounded by polar trees and bananas, may also behold vegetable forms, which seem to belong only to northern countries. Cypresses, firs, oaks, barberries, and alders, which resemble those of our own country, cover the mountainous districts of the south of Mexico, as well as the chain of the Andes under the equator.

§ 2. *On the Geographic Distribution of Animals.*

The unknown power which has scattered animal life over the globe, and which continues to sustain it, has certainly not been confined to a single region. Matter,

everywhere, must have acquired animation from the voice of the Creator; the elementary particles, while attracting each other, and disposing themselves in all sorts of forms, sometimes giving rise to primitive or elementary fibre, sometimes being transformed into fluids, and then into solids, and thus constituting muscles, bones and different kinds of texture, must have everywhere presented the spectacle of that generative process, which is probably at all times ushering into existence those infusory animals, those monads which, even by the aid of the microscope, appear only as a small point. It is difficult to conceive that there exists in this original tendency of matter towards organization, differences founded upon the geographical situation of places.

The equatorial seas are the special habitation of the animals named the *polypi*, the development of which, seems to require the rays of a vertical sun. The *branched polypi* form an entire circle round the globe, and are replaced in cold latitudes by *encrusting polypi* or *nullipores*. The true *coral* seems to occupy only the basins of the Mediterranean and the Red Sea. The stories which have been told relative to the existence of immense polypi or hydras at different parts of the ocean, as well as in regard to the monstrous *krakens* of Norway, are altogether fabulous.

Zoophytes exhibit the first actings of creative power; they may be considered as confused masses of beings animated with an incipient principle of life, but not yet existing separately. *Mollusca*, whether naked or testaceous, have acquired a real individual existence. These animals are scattered with the greatest uniformity between the tropics. Some of them are found all round the globe, while others are confined to particular seas. The shores of America and New Holland have each peculiar species which vary according to the degree of latitude. The shells of Timor are found on the coasts of New Holland, only as far as to the south-west point; on the other hand, the shells of Van Dieman's Land, such as *haliotis gigantea*, and *phasianellus*, diminish in size as they follow the coast of New Holland to King George's Sound, and entirely disappear beyond them. The *pinna marina*, whose glossy filaments outshine silk, thrives only in the Indian Seas and the Mediterranean. The pearl-oyster attains perfection nowhere except in the equatorial seas. But this natural arrangement is not always observed; for many shells are transported from one pole to another by means of ships to which they adhere. In this way the waters of New Holland have been peopled with the *teredo navalis*, so destructive to vessels.

Amidst the vigorous vegetation of the torrid zone are produced the most brilliant and the strongest *insects*, such as the butterflies of Africa, of the East Indies and America, which rival the lustre of metals in the brilliancy of their colours. In these regions, too, and more particularly in South America, the forests, peopled with millions of glow-worms, present to the eye of the benighted traveller the scene of an immense conflagration. The *termes* of Africa, called also the white ant, build solid hillocks, and the spider of Guyana attacks even birds with success. Certain kinds, such as gnats, bees, and flies, appear to be equally distributed over the whole globe. The short polar summer calls into existence a multitude as innumerable as the heats of the equator. The musquito, which torments the traveller on the banks of the Orinoco, resembles that which buzzes in Lapland. Wherever man has not drained the marshes, and cleared the forests, insects reign with triumphant sway.

We have thus followed, through the orders of zoophytes, mollusca, and insects, the gradual development of animals *with white blood and without vertebræ*, which, having few or no organs of sensibility, appear to form in the animal kingdom a sort of hemisphere diametrically opposite to that of animals *with vertebræ and red blood.*

This second series of the animal kingdom commences, like the first, in the bosom of the ocean, that cradle of all primitive organizations.

Fishes form a special division of the animal kingdom. While destined to live in a medium denser than air, their organization resembles in some respects that of birds, and in others that of the mammalia. The want of activity observed in fishes, renders it probable that every basin of the ocean has its particular tribes, which are born and die there. We know the stations of some species of fish. Thus the cod, which are distributed all over the northern seas, between Europe and America, congregate chiefly upon the great banks of sand to the south-east of Newfoundland. Pursued by many thousand fishermen, the cod propagates with astonishing fecundity; it has been calculated that each female carries in its ovary more than nine millions of eggs. Some fish are confined exclusively to the southern ocean, while others inhabit the northern polar seas. The *coryphenæ* and *chatædons* are met with only in the torrid zone. Different species of the former, which, on account of their brilliant colours, have received the name of *giltheads*, are the most active enemies of the flying fish, which, like them, are found only between the tropics, or at farthest, toward the 40th parallel

of latitude. These genera are found in the Eastern, as well as in the Atlantic ocean, but probably the species are different. There are a great number of electric fishes, such as the *gymnotus electricus* of America; the trembler, or the *silurus electricus* of the rivers of Africa, and the *torpedo*, which appear to be dispersed over all the seas.

The migrations of fishes have not yet been studied with success. We do not know why the herrings, coming from the depths of the frozen sea, proceed every year to the coasts of Ireland, Scotland, Norway, Sweden, Denmark, Holland, and the United States, as well as to those of Kamschatka, and the neighbouring islands. Tunnies migrate also every year from the Atlantic to the Mediterranean; a fact which was known to the ancients.

The fishes of lakes and rivers are still less susceptible of geographical classification. The genera *cyprinus* and *perca*, of which carp and perch are the representatives, people almost all the rivers of the temperate zones. Sturgeons inhabit small inland seas, such as the Baltic, the Caspian, and the Black Sea; the large species common in the Wolga and the Danube, is surpassed in size by the *silurus glarus*, the giant of river fishes. The voracious pike and some other species often live in subterraneous seas, which communicate with the atmosphere only by small openings.

It is curious to remark the presence of some sea fishes, such as the *cabeliau*, a kind of cod, in Lake Winnipeg, in the interior of North America. There are some fishes which occasionally forsake their native element. Eels traverse meadows; and upon the coast of Coromandel, a kind of perch, *perca scandens*, climbs up the palm-trees. A fish is also mentioned as having been found by Commerçon in New Ireland, which often climbs upon trees, and runs along the sand like a small lizard.

We may perhaps be allowed to class with fishes those warm-blooded mammalia which possess a combination of external forms, equally characteristic of the fish and the quadruped. We mean the whale, the narwal or sea unicorn, the cachalot or spermacetie whale, the dolphin, the sea-horse, and the phoca or sea-calf, which, inhabiting both the sea and the land, form, in the progressive development of their organization, a link between two different orders.

As the mammiferous amphibia or the *cetacea*, require frequently to breathe atmospheric air, it is highly probable that they are confined to certain climates. The phocæ of the South Seas are undoubtedly different from those which inhabit the waters of the north. The sea-lion met with in the neighbourhood of Kamschatka, differs essentially from that of the Greenland seas. The *phocæ vitulinæ* or sea-calves, which are said to exist in the Caspian sea, in the lakes of Aral, Baikal, and Ladoga, appear to be a species allied to the otter, and different from the marine phocæ. The large-headed cachalot, which inhabits the equatorial regions, particularly the Indian Ocean, and from which we procure ambergris, differs materially from the great cachalot of the frozen seas.

Among terrestrial animals *reptiles* occupy the lowest rank. The crocodile of Africa, the gavial of the Ganges, and the different caymans of America, are the giants of the lizard tribe. In the warm regions of America and Oceanica, we meet with gigantic serpents, which conceal a deadly poison under their fangs. Tortoises, which feed on sea-weeds at the bottom of the ocean, cover the sands of equatorial regions only with their numerous eggs.

The wings with which *birds* are provided seem to assign to them the whole atmosphere as a domain. These animals, however, are subject to certain geographical laws. The condor and the king of the vultures, which soar above the summit of the Chimborazo itself, never forsake the chain of the Cordilleras of Peru and Mexico; the vulture and the great eagle never remove from the summits of the Alps. The sea-eagle or ospray is perhaps distributed over the whole globe. Parroquets are chiefly confined to the torrid zone; they are common in America, and are found as far as the islands of Macquarie, in the 52d degree of south latitude. The beautiful loris come from the islands to the south-west of Asia, and the aras are all brought from America. The famous birds of paradise are never met with beyond the limits of a very narrow region of the torrid zone, viz. New Guinea, and the neighbouring islands. Of the birds which cannot fly, every equatorial region isolated by the sea produces its particular kinds. The ostrich of Africa and Arabia, the cassowary of Java and Australia, and the touyou of America, present, in every distinct species, the same general features of organization. The smaller birds in tropical countries are adorned with the most splendid colours, their plumage vying with the metallic brilliancy of the insects in the same zone.

The temperate zone of birds reaches in our hemisphere from the 30th to the 60th parallel. Within these boundaries the genera, and even some species, are no longer

confined to regions distinctly marked, and have no particular fixed countries. Besides, man has either transplanted, or drawn in his train with him as he wandered, several species previously confined to one particular country. The most remarkable geographical phenomenon is the annual migration of swallows, of storks and cranes, which at the approach of winter abandon the northern countries of Europe to visit Italy and Spain, and even Africa.

The frozen zone possesses a small number of species which are peculiar to it, and these belong chiefly to the aquatic genera, more especially the duck tribe.

Every grand maritime division of the globe has its peculiar birds. The albatros makes its appearance as soon as we approach the 40th parallel of latitude. The frigates, and the tropical birds, never forsake the torrid zone. The penguin of the Northern Pole is represented by the manchot in the South Seas. These birds without wings, may be considered as the lowest of the order to which they belong.

Quadrupeds form an order of animals, much superior to the preceding, and their geographical distribution may throw much light on the history of the earth, and is intimately connected with the history of man himself.

In the migration of animals, we have not so much to attend to their *active power*, or the energy of their organs, as to what may be termed their *passive power*, or their capacity of resisting changes of temperature. Frequently, out of a whole genus, one species only is endowed with this capacity. At another time an animal species owes its extensive distribution solely to the care of man, who was able to master it, and who carried it along with him to the very extremities of the globe. The external organs of animals undergo great changes, merely in consequence of their *domestication;* difference of climate produces others not less remarkable. As to the wild animals, they are directed in their migration, by the abundance or the scarcity of food. The carnivorous ones find almost everywhere their natural food; for this reason they have been able to spread themselves to a great extent. Those which cannot support great cold, have been unable to cross from the old to the new continent, because the only direct mode of communication between these two continents, is that furnished by the arctic ice. There are many different species of animals, whose residence history proves to have anciently been in much colder climates than those which they now inhabit. The continual inroads of man have either destroyed them or driven them away, or the progress of agriculture, by clearing the forests, has bereft them at once of their range for food, and their place of shelter.

Several quadrupeds, by their almost general distribution, baffle every attempt at geographical classification. These quadrupeds are either in a state of domestication, such as the dog, the cow, the sheep, the goat, the horse, the ass, the pig, and the cat; or in a wild state, as the fox, the bear, the hare, the rabbit, the stag, the deer, the squirrel, the rat, the mouse, and the ermine. Amongst these animals, however, there are some which do not live in the frozen zone.

The *dog*, the faithful companion of man, has followed him into every climate; in many countries he is the only domestic animal, and supplies the place of the horse and the ox.

The *ox* lives as far as the 64th degree, and in Lapland even under the 71st. This animal appears to be a native of the warmest part of the temperate zone of the old continent; it is there that he attains the greatest degree of strength and courage. But in humid and cold climates, such as Gallicia, Holstein, and Ireland, the ox grows much larger, and the cows give more milk.

The *sheep* and the *goat* equally support the polar cold and the heat of the torrid zone. The original race of sheep, the *argali* or *mouflon*, still exists, according to Zimmerman, on all the great mountains of the two continents. The *capricorn* and the *ibex* or *wild goat*, which are the ancestors of the common goat, inhabit the highest mountains of Europe, and more especially those of Corsica.

The *horse*, which did not exist in the new world before the arrival of Europeans, is spread in Europe, and in Iceland even beyond the polar circle. In Asia, the horse is scarcely found beyond the 64th parallel. In America, it reaches Patagonia. Arabia, Persia, Turkistan in Asia, Barbary in Africa, Andalusia, England, the kingdom of Naples, Hungary, Poland, Denmark and Normandy in Europe, are the countries which furnish the best and the finest horses.

The *ass*, although far from being reckoned a very delicate animal, does not support cold so well as the horse. In Europe it is rarely seen beyond the 52d parallel; and we do not believe that it can propagate at the 60th degree of latitude. The climates most favourable to the ass, are those between the 20th and 40th parallels. There he grows large and handsome, is lively and docile, and is held in estimation.

The *hog* is met with throughout the whole of the old continent, beginning at the 64th degree of north latitude. The *wild boar* is not found beyond the 60th degree. In the new world there were none of these animals previously to its discovery by Columbus; they have been since introduced, and now extend from the 50th degree north latitude as far as Patagonia. The hog is distributed over almost all the islands of the Great Ocean, peopled by the Malay race, where it is the chief domestic animal.

The *cat*, now distributed over the whole globe, was not originally met with in America; and according to the learned naturalist Lesson, not even in any part of Oceanica.

The species of wild animals scattered over all the climates of the two continents are very few, it is even doubtful whether there are any except those introduced into the new world by man.

Of all the wild quadrupeds, the *fox* is perhaps the most extensively distributed, and most easily acclimatised. Vast numbers of foxes inhabit Nova Zembla, and the shores of the frozen sea; and they are not less numerous in Bengal, Egypt, and upon the coast of Guinea. They are also found over the greater part of the new world, but the species are different from those in the old world.

Animals similar to the *hare* are found in Siberia, and on the banks of the Senegal; upon the coast of Baffin's Bay, and over all the New Continent.

The *squirrel*, according to Zimmermann, inhabits every part of Europe and Asia, from the extremities of Siberia to the kingdom of Siam, and is to be met with in Africa and the two Americas. But it appears that in every region of the world the species are different.

The *rabbit*, so generally distributed over the old continent, seems to have been brought thither by colonists from the new world, and to have afterwards passed from the domestic to the wild state.

The *stag* is only found in the old continent. It inhabits Europe as far as the 64th degree, and Asia to the 55th, and in some places even to the 60th degree. In America, the place of the stag is supplied by the *wapiti*, an animal peculiar to that part of the world.

The *common bear* seems to be confined to Europe and the north of Asia, and does not exist in America. The *black bear* is an imaginary species. There are two bears mentioned by Horsfield as peculiar to the Malay Islands, and called by him the *great-lipped* and the *Malay bear*.

The *ermine*, according to Zimmermann, lives in all climates. There are, however, differences between the species which inhabit the Molucca Islands, Guiana and Africa. The same species is found in Siberia, Lapland, Newfoundland, and Canada.

Rats and *mice*, those troublesome parasites, embark on board our ships, and cross with impunity the equator, as well as the polar circles. There are none of them however in Greenland, nor in the most northern part of Lapland; and in Siberia they are never observed beyond the 61st parallel. From the preceding observations, we may draw the conclusion, that it is not yet certainly demonstrated that any species of animals, perfectly identical, has been distributed by nature over all the regions of the globe. In similar climates, the organizations have assumed characters which nearly approximate, but never exactly coincide.

There are some quadrupeds, which, from their capacity of supporting a very great degree of cold, are distributed over both continents without having ever passed the tropics; they belong to the cold part of the north temperate zone.

The *rein-deer*, of all known terrestrial animals, has its range nearest the pole. In Scandinavia, it can scarcely exist to the south of the 65th parallel; in Russia, from the greater coldness of the climate, it is found under the 63d; in Asia, it descends still lower, and roves into Chinese Tartary, among the Tungouses, beyond the 50th degree. The rein-deer, or the *karibou* of Canada, which is the same animal, descends in America as low as the 45th parallel.

The *white* or *polar bear*, an animal totally different from the common land bear, and much more formidable, inhabits all the coasts of the frozen sea, and crosses from one country to another upon the floating ice.

The *isatis*, or *polar fox*, an animal different from the common fox, appears to like the cold more than the rein-deer, or even the white bear. It is not confined to the immediate vicinity of the pole, but advances as far as the Aleutian Islands and Kamtchatka, on one side, and on the other to Iceland and Lapland.

The *river otter* is found upon the Old Continent, from the 70th degree, to about the 20th, in the kingdom of Siam; but in the European countries on the shores of the Mediterranean, it is scarcely ever seen, having been probably expelled in conse-

quence of the cultivation of the soil. The industrious and peaceful *beaver* was once, perhaps, a native of all the countries of the globe, or at least of the whole of the northern temperate zone, for their habitations existed in France, in Italy, in Persia, and in Egypt. This half-civilized race of animals has been extirpated by man. In the new world, we still find small communities of beavers, from the 60th to the 30th northern parallel.

To the *marten* is assigned about two-thirds of the northern temperate zone, beginning at the 67th degree in Europe, the 64th in Asia, and the 60th in America.

The distribution of some other kinds of animals is uncertain. The *lynx*, that tiger of cold climates, lives to the south of the polar circle; in the Ancient Continent, he appears as far north as the Pyrenees, and in Mongolia. We are but imperfectly acquainted with those animals of the new world, particularly of Carolina and of North Mexico, to which the name of *lynx* has been given.

The *elk*, an animal which is every day becoming more rare, seems to dread extreme cold, since in Europe it very seldom passes to the north of the 64th parallel; on the other hand, it is never found to the south of the 52d degree. In Asia, the farther we advance towards the east, the more does it range to the south. The American elk, though not much different, appears to belong to a particular race. We find it to the south of Hudson's bay, and it extends to New England, or perhaps in the interior as far as to the Ohio.

The *flying squirrel (sciuropterus)* never ventures farther either north or south, than the limits of the fir forests in which it makes its abode, in Asia and in America. The *mountain rat*, or *marmot*, follows in Europe the chain of the Alps and the Carpathian mountains. It does not exist in Scandinavia, but is to be seen in Poland, and the Ukraine. It is found at the mouth of the Don, on the Ural mountains near the river Kama, and from thence the race has been propagated as far as Daouria. In the New World, this animal is found from Canada to Virginia, and even upon the Bahama islands. The *badger* and some other small animals inhabit equally the northern half of the temperate zone.

The quadrupeds which exclusively belong to the one or the other of the two continents, are in general such as are unable to support the cold which prevails beyond the 60th parallel. The *lemming*, however, a species of mouse which often migrates in vast numbers from one country to another, inhabits the whole of the frozen zone of the old continent, and has not been found in America. The animal named the *musk* inhabits the mountains of Asia, from Cashmere and the Altai to the mouths of the river Amur; it is not spread over any part of the new world. There are still some exceptions less remarkable.

Certain animals appear to be attached to the confines of the temperate and torrid zone. The two-humped or *Bactrian camel* seems to be indigenous in the elevated regions of Central Asia, and is mostly found in Zoungaria, Mongolia, and the countries of the Mandchews, Khirgiz, and Bashkirs.

The one humped or *Arabian camel* is indigenous in Arabia, but abounds also in Turkey, Persia, North-western India, and throughout the Sahara, Barbary, and other countries of Northern Africa. The *Dromedary* is a fleet species of this camel.

Both kinds of camel appear to be chiefly attached to that long tract of mountainous country, and those naked elevated plains which traverse the whole of the old continent.

The nimble *chamois* loves the mountains of the temperate zone, the tops of the Pyrenees, the Alps, the Apennines, the Carpathian mountains, Caucasus, and the country of Siberia, to the banks of the Ischim. The *antelope saiga*, and the *antelope with the goitre*, inhabit the upland plains of Tartary; the former is found as far as the 53d parallel. The *gazelle*, with its mild and brilliant eyes, prefers the more southern countries; a native of Caucasus, along with the chamois, the gazelle extends its range as far as Arabia, and across the whole of Africa to Senegambia. It is again met with in the southern temperate zone, and in Cafraria, together with a great number of other species of antelope. The race of *antelopes* follows, like the camels, the great upland plains of the old continent. There are species, however, which appear to be peculiar to the cold temperate zone.

The *jackal* lives, according to Zimmermann, in Asia and Africa between the 43d and 8th degrees of northern latitude. The supposed wolves of Congo and of Cafraria are only jackals.

The *buffalo*, commonly regarded as originally coming from the torrid zone, has been domesticated, and carried as far north as the 46th degree, both in Europe and Asia. The *grunting ox*, or the *yak*, inhabits the upland plains of Mongolia or Thibet. The *buffalo of Cafraria (bos caffer)* appears to be spread over all Africa. The mountains

of Thibet also contain several very remarkable species of oxen, such as the *bos frontalis*, &c.

We now come to the quadrupeds peculiar to the torrid zone of the old continent.

The numerous family of *apes* gambol in the forests between the tropics, and show rather a dislike to the temperate climates, at least in their wild state. The apes that live out upon the rocks of Gibraltar, have propagated in that situation. As the word *ape* has been taken in a very generic acceptation, it is said that this animal, though confined to the torrid zone, is equally to be met with in the two continents; but, if we carefully distinguish the various species, we shall perceive that there are none of them common to both. There is a very distinct line of demarcation between the country occupied by the *monkey*, the *baboon*, the *mandrill*, the *jocko*, and the other apes of Africa, and that inhabited by the real *ourang-outang*, the *gibbon*, and the *wouwou*, animals which most nearly resemble the human figure, and which are met with in the islands of Borneo and Java. Even in the *quadrumana*, there are limits marked to each species; the *loris* belong to the East Indies; the *gallagos* to Senegambia; and the *makis*, properly so called, to Madagascar.

The *giraffe* or the *camelopard*, so remarkable for its height, its swan-like neck, and its gentle manners, seems to belong only to one region of Africa, namely that which extends lengthwise from Cape Guardafui to the Cape of Good Hope, and to which should be joined the mountainous plains, which probably occupy all the interior of southern Africa, between the sources of the Nile and those of the rivers of Congo, Coenza, and Zambeza. This region, which is almost unknown, with the exception of the maritime parts, is the native country of three sorts of asses, the common zebra, the zebra of Burchell or *equus zebroides*, and the *quagga*.

The two varieties of the *rhinoceros* have each of them its own country. That with two horns inhabits only South Africa, beginning at Congo and Abyssinia. The other, with one horn, is found in the East Indies, and in China. In this latter country the rhinoceres extends to the 30th degree north. They have on the other side of the line spread as far as the islands of Sunda.

The *hippopotamus* is now entirely confined to Africa; it inhabits all the great rivers of that quarter of the world, except the lower part of the Nile, and great numbers are seen near the Cape of Good Hope.

The *elephants* of Africa and Asia are of two different races, the Asiatic elephant inhabits only India, China, as far as the 30th degree of latitude, and some islands to the south-east of Asia, to which it has been transported by man. In Persia and in Arabia, we find no elephants but those which have been brought from other countries. The African elephant does not advance farther north than the 20th degree; from thence to the Cape of Good Hope they are everywhere met with in great numbers.

The *lion*, the powerful and formidable king of quadrupeds, is now-a-days found in the deserts of Arabia, from whence he extends his ravages to the environs of Bagdad. According to Zimmermann, he is to be met with in the mountains of Hindostan, upon the coast of Malabar, upon the Ghauts of India, and even in the islands of Sunda, and the kingdom of Siam; this, however, appears to us extremely improbable. Africa always was, and still is, the country most celebrated for an abundant breed of lions. The lions which roam in the elevated but burning plains, to the south of Mount Atlas, are the most distinguished for strength and courage.

The *tiger*, less extensively distributed than the lion, does not extend beyond the warm and temperate countries of Asia. It is found in eastern Persia, and in China; but the climates in which it attains the greatest size, and displays most ferocity, are those of Bengal, the Deccan, Malabar, Siam, Pegu, Ceylon, and Sumatra.

Africa contains no genuine tigers; but by way of compensation, it has *panthers* and *leopards*, two species that are sensibly distinguished only by their spots, these being more beautiful and more perfectly rounded in the leopard, which chiefly inhabits Guinea and Senegambia. The *ounce*, which differs from the panther in the grey colour of its hide, and the superior mildness of its nature, is more widely distributed, as it is found throughout the whole of Barbary, in Arabia, in Tartary, and China, and sometimes makes its appearance near Kutznesk in Siberia.

From this sketch of the geographical distribution of animals peculiar to the ancient continent, the following general inference appears deducible, viz. that the *interior of Asia, and that of Africa, have been each of them the native region of a certain number of species of animals.* The tiger, the Indian elephant, the camel with two humps, the the wild sheep, the *houlan* or wild ass, the *jiggetai* or horse ass, the grunting ox, the elk, and the musk, are the animals peculiar to the central upland plains of Asia. Those which are characteristic of the upland eastern plains of Africa, are the lion

the African elephant, the dromedary, the buffalo of Cafraria, the giraffe or camelopard, the zebra, the quagga, and monkeys.

Amongst the animals which peculiarly belong to North America, we think, may be reckoned the great elk, named by the Americans, the *moose-deer*. The bears, the lynxes, the ounces of the United States, are probably as different from the animals of the same name in the old continent, as the squirrels and hares are upon which they feed.

The *bisons*, or humped bulls, are the largest quadrupeds in the new world. They roam in great herds to the west of the Alleghany range to the south of Hudson's Bay, from the 52° to the 33° of north latitude.

The *musk-ox*, which is about the size of a two-year-old heifer, and which in its general aspect resembles a large sheep rather than an ox, prefers bare and naked mountains. It inhabits chiefly the high latitudes of north America.

We now come to the quadrupeds indigenous to South America.

The *jaguar (felis onça,)* the tiger of the new world, resembles the ounce in strength, and the panther in skin. Some individuals equal the tiger in size. The *puma* or the *couguar*, which has been called the *American lion*, has a body more nearly resembling the wolf, and a head like that of the leopard of Guinea. It does not extend farther than the 45° of south latitude.

The *llama* or *guanaco*, which has been improperly named the camel of the new world, and the *paco*, which in its domestic state is called *vicugna* or *vigonia*, or Peruvian sheep, inhabits Chili and Peru, to the 10° south latitude. It is distributed neither in the plains of Tucuman, nor in those of Paraguay.

The *tapir* is the largest quadruped of South America, although it is only the height of a cow. A peculiar species of tapir is found in Sumatra. According to Lesson, the *mé*, or pretended tapir of the Chinese, is merely an imaginary animal. The armadillo, the tajassou-peccary, the idle aï, the sloth, the *fourmillier*, or ant-eater, the *tamanoir*, the different *agoutis* and *coatis*, species, all of which acknowledge South America as the place of their nativity, do not in general spread beyond the tropic. The tajassou, however, according to some accounts, is found in Chili. The small long-tailed apes, the *sapajous* or *marmosets*, the *tamarins*, the *sagouins*, and other similar species, are very numerous over all the torrid zone of America; they essentially differ from the apes of Africa and Asia.

On the confines of the temperate zone, we observe stags of different kinds, some undescribed mice or rats, and the elegant *hamster chinchilla*.

We have still to consider another province of the animal kingdom, a province hitherto imperfectly explored, but certainly very distinct from those which we have already examined. It is remarkable, that with about three exceptions, Australia has only as yet presented animals belonging to the *marsupial* division of the *carnivora*. We may remark, however, that the *didelphes*, which may be looked upon as the type of this family, are confined to South America, and the *couscous* are scattered over Polynesia and the Malay islands. In New Holland alone we find the *ornithorynchi*, small *edentata*, which are considered oviparous, the *echidnes*, the *petauristes*, and the true *phalangers*. The *kangaroo* is replaced in the Moluccas by the *pelandoc*. The *dazyures* in Australia take the place of the *civets* of other parts of the globe, but the *wombat* and *phascolarctos* remain without a parallel. As to the carnivorous amphibia, they are the same species which live on all the islands of South Polynesia. The *pteropus poliocephalus*, a species of shark found in the bay of Carpentaria, is also found at New Guinea. We may then consider New Holland as the cradle of an entirely new creation, as yet unknown in all its branches, and presenting animals formed upon a peculiar plan, and destined to elucidate the history of other animated beings.

§ 3. *On the Fossil Remains of Organic Bodies, Vegetable and Animal.*

The remains of organic beings buried in the bowels of the earth, and commonly known by the name of *fossils*, are of great importance in determining the geological epochs of our globe.

The debris of numerous vegetables which formerly adorned the earth, and of animals which covered its surface, traversed its waters, or inhabited its atmosphere, are undoubted evidences of a previous order of things anterior to the existence of man.

Fossils are essential to the formation of an accurate theory of the earth. They have enabled us to ascertain in a decided manner that there have been successive epochs, and a series of different operations, in the formation of the world. From the situation in which they are found, they prove that the surface of the globe must have under-

gone a very great change. They furnish distinct evidence as to the succession of the secondary and more recent deposits; and by analogy, they have enabled us to draw conclusions relative to the primitive strata. Had there been no fossil remains in any of the deposits, we could not have drawn correct inferences in regard to their comparative antiquity. "By fossils," says Cuvier, "we have learned the little we do know regarding the nature of the revolutions to which the globe has been subject. They have taught us, that the beds in which they are contained have been quietly deposited in a liquid, and that their variations correspond to the changes occurring in that liquid."

The study of fossil animals and vegetables, more especially of shells, which are the most numerous of all, has enabled M. Ferussac to ascertain, by comparing fossil with living species, that the temperature of the terrestrial surface has undergone a remarkable diminution, and that to this are to be attributed in a great measure all the changes which animals and vegetables have sustained. By the same means he has solved most important questions regarding the successive creation of living beings, and has developed the laws which regulated their distribution over the surface of the globe at a period anterior to the existence of man.

Petrifactions, taking this term in its ordinary acceptation, comprehend all the stony substances which have the form of an organic body. There have been instances where a liquid, impregnated with stony particles, has flowed into a cavity formed by an organic body which had disappeared. In that case the stony mass has assumed the exterior form of the body which was previously there. If this body was, for example, a branch or trunk of a tree, the stone will have knots and wrinkles on its exterior; but in the interior, it will exhibit all the characters of real stone. According to Hauy, it will only be "the statue of the substance which it has replaced."

At other times, a vegetable or animal substance, while undergoing a gradual and slow decomposition, is surrounded and pressed upon by a stony fluid. In proportion as an organic particle is dissolved and disappears, a stony particle replaces it. Thus, particle after particle, the stony matter occupies the spaces left empty by the gradual decay of the vegetable or animal parts; and by being moulded in these cavities, it copies minutely the texture of the organic body. In this way we usually explain the formation of what is called *petrified wood*, an imitation of real wood so faithful, that on making a transverse cut, we distinguish the appearance of concentric layers, which, in the living tree, arise from its annual growth. Sometimes it is even in such a state that we can recognize by the texture the species to which the tree belonged.

Mineralized bodies, and those which have been changed into bitumen or coal, may be referred to the same system of formation. Thus *turquoises*, for example, are the molar teeth of some large marine animal penetrated by a mineral substance, which has by degrees replaced the softer parts of the bone.

Impressions are found between the laminæ of certain schistose clays. They are either relievos or hollows, representing the skeletons of animals, more especially of fishes, leaves, reeds, and entire plants, chiefly belonging to the fern tribe.

We shall consider successively the different classes of fossil remains.

Fossil Vegetables are much more numerous than animals, although not so well preserved. They are found wherever fossils exist, but in very different states. In the earlier secondary deposits, they are found in the state of bituminous charcoal; in the newer, they exist in an earthy condition. In both instances, they have merely left impressions. In some of the recent deposits they are found petrified, or in the form of lignite. Coal, that important material for combustion, seems to be of vegetable origin. The plants met with in the old formations are aquatic, and belong to the warmest countries of the globe. It is only in the modern alluvial deposits that we meet with trees analogous to those found in our climates.

All the parts of plants may be fossilized. The roots, when petrified, are called *rhizolites;* the impressions of the leaves are named *lithobiblions* or *bibliolithites*, those of the flowers *antholites*, and those of the fruits *lithocarps*.

Bituminized wood, although buried at considerable depths, may be the production of some less ancient and less violent revolutions. Pieces of wood have been found, of which one end was in a natural state and the other bituminized; and it is remarkable, that this wood often belongs to indigenous species. At Upsal is preserved a large piece of an alder tree, which was discovered in Scania, converted into jet, having still the bark and buds very discernible. Thus bituminized woods approach by degrees to the nature of subterranean forests, or heaps of wood, which have been simply buried by some modern convulsion.

The numerous tribes of *zoophytes*, more especially *madrepores*, seem to have been

contemporaneous with the first organized beings. Their remains are found in some transition rocks, and in the greater part of the later formations. They are found there in all conditions, and sometimes in such quantity that the rock appears to be entirely formed of them. These fossils are almost always associated with the remains of molluscous animals. Ramond and other naturalists have seen madrepores and corallines on the highest summits of the Pyrenees. Fossil polypi, analogous to those of our seas, are very rare. Some of the species found correspond to those which live in the opposite hemisphere, on the coasts of the Indian Ocean and New Holland.

Amongst the remains of the animal kingdom, shells are the most abundant. They frequently occupy immense spaces, and are principally found in calcareous rocks. France furnishes us with the best known examples. The environs of Paris alone have supplied M. Lamarck with more than 80 genera, comprising upwards of 500 species; and if his arrangement were completed, the number of species already recognised might be almost doubled. We know that a vast bed of chalk, accompanied by shelly deposits, extends from Rethel, through the departments of the Maine and the Aube, towards Sens. The quantity of foreign bodies which have been found in this deposit of chalk, and in its vicinity, is very considerable. All the plains of what was formerly called the Isle of France present vast calcareous and sandy beds, filled with, or rather composed of shells, some belonging to species which now inhabit our seas, and others similar to those which live in fresh water, — a circumstance which establishes a difference between them, both as regards their age and their origin. In Touraine, or the department of the Indre and Loire, there exists a continuous bed of shells, about nine ancient square leagues in superficial extent, and at least twenty feet in thickness. The whole mass of shells is estimated at 170 millions of cubic toises.

The other countries of Europe are not less abundant in fossil shells. Twenty pages would be insufficient to enumerate the places in Germany, Italy, and England, where they are found. The stratified rocks of the chain of the Hartz, considered as the most ancient, contain also zoophites, belemnites, ammonites, encrinites, pentacrinites; in a word, shells the most remote from the actually existing genera. On the contrary, the most modern calcareous rocks, those of Mount Bolca, near Verona, and the chalk hills of England and Zealand, enclose genera approaching to those which now exist, such as ostracites, pectinites, buccinites, nautilites, chamites, and others. The north and the south of Europe do not yield to the central parts in this respect: the calcareous rocks of Rœttwik, in Sweden, at 3000 feet above the sea, the vegetable earth of Finland, and the argillaceous strata of the islands of Norway, abound in shells, some entire, and others nearly changed into earth. In Greece and Spain we often travel over nothing but shells. Ramond has found them in the Pyrenees, upon the summit of Mount Perdu, at the height of 10,578 feet; Lamanon on the Dauphinese Alps, at 7,446 feet; Guerin on Mount Ventoux, at 6,162 feet; and Saussure on the Alps of Savoy, at 6,104 feet. It may be affirmed, almost with certainty, that throughout Europe, wherever there is chalk there are also shells.

Everything concurs in leading us to consider the other parts of the world as perfectly similar to Europe with respect to the abundance of shells. Mount Carmel abounds in petrified oysters. On the chains which border the Caspian Sea, shells are found even at a height above the region of the clouds. The mountains of China, according to the Jesuits, are covered with them, and Russian travellers state, that enormous quantities of them are met with in Siberia. According to modern accounts, Oceanica and some parts of Africa are very rich in fossil shells; America is not less so; and M. Humboldt has found them on the lofty chain of the Andes, at an elevation of 13,200 feet.

These fossil shells are sometimes divided into *pelagian* and *littoral*. The ammonites, belemnites, nautilites, gryphites, terebratulites and porpytes or lenticular stones, &c. belong to the first class; while the greater part of the other marine shells belong to the second, although they are often mixed with the former. Fossil shells have also been divided into terrestrial, fluviatile, and marine. The greater part of them belong to the marine species. Lamarck, Ferussac, and Brongniart, in France; Sowerby, in England; Brocchi and Rema, in Italy; and Goldfuss, in Germany, have contributed most to the advancement of this department of science.

Other marine animals have left less abundant remains. Fishes, next to zoophites and molluscous animals, are the most frequent: we find them in Switzerland, in the slaty schist near Glarus, in Germany in the marly bituminous schist of Pappenheim, in the coppery schist of Eisleben, in the stinking schist of Œhningen, in Egypt and in Syria, in the calcareous rocks on the coast of Coromandel, and in several mountains of China. The place which has furnished the greatest number is Mount Bolca,

near Verona in Italy. The size of some of the fishes of the old world must have been enormous, if we judge by their teeth. The glossopetræ, or shark's teeth *(squalus maximus)* prove this distinctly. The labours of Cuvier, De Blainville, and Agassiz, in regard to fossil fishes are those alone which deserve to be noticed.

The erpetholites are less numerous than the ichthyolites, and appear to have existed at a period posterior to fishes. Almost all the known fossils of this class belong to the chelonian or tortoise tribe, the large saurian or crocodile tribe, and the ophidian or serpent tribe. The gigantic and extraordinary reptiles which have recently been discovered in England, Germany, France, &c. belong to the saurian order. These are the geosaurus, a sort of lizard 13 feet long, which lived in the rivers and pools of the ancient world; the megalosaurus, another gigantic lizard, allied to the crocodile, which was more than 30 feet long; the mesosaurus of the learned English geologist Conybeare, a reptile 20 or 24 feet long, which seems to have been the connecting link between the saurian reptiles without and those with palatine teeth; as well as the ichthyosaurus and plesiosaurus of Cuvier, species at present unknown in our globe.

An entire tortoise has been found in the sandstone near Berlingen. In the neighbourhood of Brussels, at Aix in Provence, and in the quarries of the great Charonne near Paris, different species of fossil tortoises have been discovered. A great number of crocodiles have been found in the coppery schists of Thuringen, and in the clayey deposit of Elston in England. The most famous are those which have been detected in the vast quarries of Maestricht under a large mass of limestone. The *crocodilus cadomensis* found in the quarries half a league from Caen, appears to be the best preserved of the genus. The celebrated fossil of Œningen, which was for thirty years looked upon as a true anthropolite, is only a batrachian reptile, allied to the salamander and proteus.

Insects and birds, so abundant in the globe at present, appear to have been rare in the former world. The few entomolites or fossil insects, discovered by naturalists, belong to the arachnides and annelides. Some impression of insects have been observed along with the vegetable remains, the greater part of them however are still doubtful. These animals are found in the largest quantity, and in the best state of preservation in amber. We find ornitholites or fossil birds mixed with mammiferous fossils, in the horizontal strata of the secondary rocks, and in the alluvial deposits; they are entire or in fragments, and in different states. The existence of fossil feathers is still doubtful, although some naturalists pretend to have them in their collections. Petrified eggs, however, have been found in Auvergne, with their shells perfectly preserved. It is singular that fossil birds have been found in the neighbourhood of Paris in much larger quantity than in any other part of the globe. Cuvier has discovered twelve species, two of which at least appear to have been birds of prey. All the birds similar to them have disappeared, or have retired to some countries still unknown to Europeans, and little visited by travellers.

Individuals belonging to the class mastodolites or fossil mammalia are more common than ornitholites, entomolites, erpetholites or ichthyolites. They are either isolated or scattered, distributed in families or mixed together. Some of them have only left impressions, but this is a rare occurrence, others have been petrified. The skeletons of some of them are as entire as if they had come from an anatomical theatre, whilst in other localities the bones have been broken and rolled by the action of water.

This department of zoology has been much advanced by the labours of Pallas, Camper, Sœmmerring, Blumenbach, Rosenmüller, Faujas, Home, &c. but it is to Cuvier that it owes the place which it now occupies in natural science. This celebrated naturalist has contributed more towards it than any one else, not only by his beautiful and numerous discoveries, but by the solid principles upon which he has founded it. He has been able to determine and classify the remains of more than 150 fossil quadrupeds, 123 of which belong to the mammalia. Of the whole number there are 90 species wholly unknown; 11 or 12 have so strong a resemblance to known species as to be considered identical with them, and the rest are in many respects similar to known species.

Many countries contain fossils belonging to this important class. But there are certain places which are famous for particular species. Thus the palæotheriums and anoplotheriums are only found in the neighbourhood of Paris. The bones of the rhinoceros are met with in larger quantity in the valley of the Arno than in all the rest of Europe. The Giants' Camp, near Quito in South America, is celebrated for the mastodons with straight teeth, and the borders of the Ohio in North America for the large mastodon. Auvergne, that classical land of volcanoes, has recently fur-

nished more than fifty new species of fossil animals unknown to Cuvier. They are about to be described in the work of MM. Bravard, Jobert, and the Abbé Croizet. As we cannot enumerate all the fossils of this class, we shall merely notice a few of the most important.

Amongst these animals, the elephant, called mammoth by the Russians, deserves the first place. It was 15 or 20 feet high, covered with a thick red wool, and with long stiff and black hairs, which formed a mane along its back. Its enormous tusks were implanted in jaws longer than those of the elephant of the present day; but in other respects it resembled the Indian elephant. Thousands of carcasses of this animal are met with from Spain to the shores of Siberia, and they are scattered also over the whole of North America. Its tusks are still in such a good state of preservation in cold countries, that they are put to the same use as fresh ivory. Some mammoths have been found with their flesh, skin, and hair entire, and the savage inhabitants of the frozen regions have sometimes fed upon them.

After the elephant comes the mastodon with straight teeth. This gigantic animal was also armed with enormous tusks, and had mammillar or tuberculated teeth, covered with a thick and brilliant enamel. These have furnished for a long time what are called western turquoises. The remains of this animal are pretty common in the temperate regions of Europe, but are less so towards the north. They are found also on the mountains of South America, along with two allied species.

North America possesses numerous remains of the great mastodon, a species larger than the preceding, and rivalling the elephant in height. It has enormous tusks, and its teeth are covered with sharp points; a circumstance which for a long time caused it to be looked upon as a carnivorous animal. A mistake in regard to the number of the grinders, made Buffon estimate the size of this animal as six or eight times greater than that of the elephant.

The rhinoceros must have been much more widely spread in the former world than it is now-a-days. There were four species, three of large size, and all two-horned. The celebrated Pallas has given a description of a rhinoceros with its skin entire, which was found, in December 1771, on the banks of the Vilhoui, a tributary of the Lena.

The fossil hippopotamus is tolerably common in France, Germany, England, and more especially in Italy. It resembles the present African species so much, that an attentive comparison is required to distinguish them.

The megatherium partakes of the generic characters of the armadillo, and also of those of the sloth. In size it equals the large rhinoceros. Its claws must have been of enormous length and power. Its whole frame possesses an extreme degree of solidity. It has only as yet been discovered in the sandy strata of North America.

The megalonix resembled it much in character, but was somewhat smaller. Its claws were longer and sharper. Its remains have been found in Virginia, and on an island on the coast of Georgia.

The gigantic-horned elk is the most celebrated of the fossil ruminating animals. It belongs to a species now lost, and appears to be more common in Ireland than anywhere else.

The fossil horse resembles very much the horse of the present day, but it is only about the size of a large ass. Its remains are found along with those of elephants and rhinoceroses.

We have still to notice two remarkable phenomena which have exercised the ingenuity of geologists, viz. the osseous breccias and the caves filled with fossil bones. The former are the fissures of certain rocks, filled with the bones of ruminantia encrusted in the midst of the concretions which filled the clefts. The principal osseous breccias at present known are those of Gibraltar, of Antibes, and Nice. The bones contained in caves belong chiefly to carnivorous animals. The Blanckenbourg cavern is the most celebrated in this respect.

We have not yet spoken of the remains of the human species, because it is not yet sufficiently proved that the human bones which have been found in caves and osseous breccias are to be referred to the same period as the debris of the extinct animals which accompany them. The best established facts lead to the conclusion, that man did not appear on the earth till after the period of the great inundations which collected so many animals in the alluvial formations, the breccias, and the caves. It is only in the peat formations that he has left any trace of his existence. He is comparatively a recent occupant of the globe, of which he has become master; and as to his appearance on the world, everything confirms the Mosaic account, that he was indeed the last and chief work of creation.

From the whole of the facts which have been collected, we are entitled to draw the following conclusions: That plants and molluscuous animals are the most ancient organized bodies of which traces are found; that fishes are the first of the series of vertebrate animals, and that their remains are much less numerous than those of the testaceous animals, inasmuch as their bodies undergo decomposition more easily, and many species serve for food to others: that the marine reptiles succeeded the first fishes; that several of these seem gradually to pass into the forms of our present reptiles, but that the transition has been so slow, that the crocodiles preserved for 4000 years in the catacombs of Thebes, when compared with those now existing in the Nile, present no distinct difference in anatomical structure; that after the first reptiles the marine mammalia appeared; that the first continents were inhabited by birds, which were succeeded first by herbivorous, and then by carnivorous animals; that man was created subsequent to all the fossil animals, and that we do not meet with any fossil remains of the human species;* that, finally, the different species of animals, traces of which we have detected, prove most distinctly this great truth, so fruitful in philosophical results, that the older the strata which form the crust of our planet are, the more unlike are the animals which they contain to the genera and species which now cover its surface, and that it is only in the last strata that we find animals which present a greater or less resemblance to existing species.

§ 4.—*On the Geographical Distribution of the Human Race.*

MAN has the whole earth as his abode. He can live in every climate, and his habitations reach to the remotest confines of animated nature. The Esquimaux of Greenland dwell as far north as the 80th degree. In the other hemisphere, the bleak and barren Tierra del Fuego supports the wretched Petcheres. The New World, though in general thinly peopled, is inhabited from one extremity to the other. In the old continent, the habitations of man form a collected whole, which is broken in upon only by some sandy tracts, but even in the midst of these deserts, man has peopled the *oases*, those verdant islands scattered over an ocean of sand.

The human body supports, upon the banks of the Senegal, a degree of heat which causes spirit of wine to boil. In the north-east of Asia it resists cold which freezes mercury. The experiments of Fordyce, Boerhaave, and Tillet, prove that man is more capable than most animals of supporting a very great degree of heat. We have no doubt that the human body would resist extreme cold equally well, provided that it retained the power of moving. As the intensity of the cold would scarcely increase in the regions lying beyond the 78th or 80th degree, it is possible that man could sail under the poles as well as under the equator, if he were not arrested by the ice.

As the physical capabilities of his frame fit him for every variety of climate, soil, and situation, man must necessarily be omnivorous, or capable of deriving nourishment from all kinds of food. Without such a capability in man, many parts of the earth would be uninhabitable; for in the cold regions of Greenland, Lapland, Tierra del Fuego (Fire-land), and the shores of the Arctic Ocean, animal food only is to be found; and accordingly we find the people of these deserts in the constant use of it alone. In the torrid zone, on the contrary, everything is unfavourable to the rearing of those domestic animals that would be necessary to feed a numerous population. The number, the fierceness, and the strength of the beasts of prey, the periodical alternations of heavy rains and scorching heats, are the principal obstacles, and they are insurmountable. This deficiency, however, of animal food is compensated by the most valuable vegetable productions; by supplying which abundantly, nature has pointed out to the people of those climates the most suitable kind of nourishment; and, accordingly, a vegetable diet is found to be the most grateful and salubrious, and animal food much less wholesome and less inviting. In the temperate regions, between these extremes, man exhibits more conspicuously his omnivorous character. In these climates, animal food is more or less abundant, and is proportionately made use of, while all kinds of grain, roots, fruit, and other vegetable matters, likewise afford abundant and wholesome nutriment. As we pass towards the polar regions, animal food becomes more and more exclusively used, till we reach the Samoieds and the Esquimaux, who are unacquainted with bread; and as, on the other hand, we approach the equator, grains and fruit constitute a greater and greater proportion of human food. According to their diversity of food, arising from the various circumstances in which mankind are placed, some naturalists have thought it possible to

* Of the more perfect animals, the fossil remains of the *quadrumana* or monkeys, which have long eluded the researches of geologists, have recently been discovered at Sansan, in the department of Gers, in the south-west of France.

classify them; as, *carnivorous* (flesh-eaters), *ichthyophagists* (fish-eaters), *frugivorous* (fruit and corn-eaters), *acridophagists* (locust-eaters), *gcophagists* (earth-eaters), *anthropophagists* (man-eaters or cannibals), and *omnivorous*, or devourers of everything. But this classification is one of very partial, uncertain, and difficult application.

The best classification of mankind is that which is based upon the differences that so notoriously exist in respect of the colour of the skin, hair, and eyes, and the form of the skull. Taking the colour of the hair as the leading character, we find in mankind three principal varieties, which Dr. Pritchard calls the *Melanic*, the *Xanthous*, and the *Albino*.* The melanic, or black class, includes all individuals or races who have black hair; the xanthous, or fair class, comprises those who have brown, auburn, yellow, flaxen, or red hair; and the albino, or white variety, comprises those whose hair is pure white, and who have also red eyes. The black variety forms by far the most numerous class of mankind, and is the complexion most generally prevalent. In this class the hair is quite black; but the hue of the skin varies from deep black to a brownish shade. In some races the black is combined with red, as in the copper-coloured Americans; sometimes with yellow or fair complexions, as in the Mongols and the olive-coloured races of Asia and Southern Europe.† The xanthous variety includes all those individuals who have light brown, auburn, yellow, or red hair, with which is almost always combined a fair complexion, which, on exposure to heat, acquires not a black or a deep-brown hue, but more or less of a red tint. The pigment of the eye is of a light colour; a light grey or azure blue is the most common, but it has sometimes various shades of yellow or brown, and occasionally a green yellow tint. This variety, however, passes into the others, so that it is sometimes difficult to say whether an individual be of the xanthous or melanic, or of the xanthous or albino class. This variety prevails in the temperately cold regions of Europe and Asia, and is a particular characteristic of the Gothic stock; but it springs up also out of every melanic race. The Jews and the Arabs are generally black-haired, but some Jews have light hair and beards, and blue eyes; and some of the Arabs are red-haired and have sanguine complexions. Many of the Russians are light-haired, but the mass of the Slavons are melanic. The Laplanders are generally dark-complexioned; but the Finns and other kindred races are xanthous. The greater part of the Tungooses and the Mandchews are melanic, but many of them are xanthous; and the same thing is observed among the South-sea Islanders and the American Indians. The xanthous variety even appears occasionally among negroes, individuals being born among them who are neither negro nor albino, but simply fair-complexioned. The word Albino is not descriptive of any whole race of people, like xanthous and melanic, or its co-relate negro, but is only applied to individual cases, which are exceptions to the colour generally prevalent among the races in which they occur. Albinos have been observed in all countries; but it is principally among the African negroes that they have attracted particular attention, from the complete contrast they exhibit to all the people around them. They are generally termed, when of African origin, *white nēgroes*, a direct contradiction in terms certainly, but which exactly expresses what is meant: a white individual of a black family. The characteristic of the albino is, that the hair and the skin are perfectly white, without a tinge of any colour, and the iris of the eyes is red. In other respects they are generally formed like other individuals of their race. No instance, we believe, is known of a perfectly black child being born of two white, or fair-complexioned parents; but albinos, or pure-white children of negro parents, are of frequent occurrence; and sometimes part of the same family are albinos, while their parents, brothers, and sisters, are genuine negroes.‡

But though each individual of the human race may be classed under one or other of these terms, tribes and nations cannot, because every tribe and nation (with a few exceptions) though its general character may be of one kind, contains individuals with shades of complexion approaching more or less to the others, and therefore other

* Researches into the Physical History of Mankind, Vol. I.

† We have found this variety very well illustrated in Bishop Heber's journal:—"Two observations struck me forcibly," says the Bishop; "first, that the deep bronze tint is more naturally agreeable to the human eye than the fair skins of Europe, since we are not displeased with it even in the first instance, while it is well known that to them a fair complexion gives the idea of ill health, and of that sort of deformity which, in our eyes, belongs to an albino."—"The great difference of colour between different natives struck me much; of the crowd by whom we were surrounded, some were black as negroes, others merely copper-coloured, and others little darker than the Tunisines whom I have seen at Liverpool. It is not merely the differences of exposure, since this variety of tint is visible in the fishermen, who are naked all alike. Nor does it depend on caste, since very high caste Brahmins are sometimes black, while Pariahs are comparatively fair. It seems, therefore, to be an accidental difference, like that of light and dark complexions in Europe; though, where so much of the body is exposed to sight, it becomes more striking here than in our own country."—*Heber's Journal*, I. 4, 9.

‡ Caille, in his travels in Africa, was informed that albinos have negro children.

particularities have been sought for by physiologists, upon which to found a classification of tribes and races. The form of the skull has been chosen by Blumenbach, and, according to his observations upon that part of the human frame, he has arranged mankind into five classes: 1. The *Caucasian;* 2. The *Mongolian;* 3. The *Ethiopic;* 4. The *American;* 5. The *Malay.*

I. In the CAUCASIAN RACE, the head is of the most symmetrical shape, almost round; the forehead of moderate extent; the cheek-bones rather narrow, without any projection, but having a direction downwards from the malar process of the frontal bone; the alveolar edge well rounded; the front teeth of both jaws placed perpendicularly. The face is of an oval shape, and straight; the features moderately prominent; the forehead arched; nose narrow, and slightly arched, or at least with the bridge somewhat convex; cheek-bones not projecting; mouth small, with the lips slightly turned out, particularly the lower one; chin full and round. The Caucasians are of all complexions, from the Hindoos and Arabs, some of whom are as black as African negroes, to the Danes and Swedes, and Norsemen, who are fair, with flaxen hair and light blue eyes. In this class are comprised the ancient and modern inhabitants of Europe (except the Laplanders and Finns), the ancient and modern inhabitants of Western Asia, as far as the Oby, the Beluртagh, and the Ganges, such as the Assyrians, Babylonians, Medes and Persians, Sarmatians, Scythians, Parthians, Israelites, Jews, Arabs, and Syrians, the Turks, and Tartars properly so called, the tribes of Caucasus, the Armenians, Persians, Afghans, and Hindoos; the Africans who live on the shores of the Mediterranean Sea, and throughout the Sahara, the Egyptians and Copts, the Abyssinians, and the Guanches, or ancient people of the Canary Islands. To these we need hardly add the European colonists who have settled in America and other parts of the world. The complexion of this class of people seems to depend very much upon climate and the degree of solar heat to which they are exposed; for they are all, without exception, born with light complexions, and become dark only as they grow up, and are more exposed to the sun. Their colour is found to deepen by regular gradation from the furthest north, where the people of this race are very fair, through the olive-coloured people of the south of France, and of Spain, Portugal, Italy, Greece, and the swarthy Moors, till the gradation ends with the deep-black natives of the African and Arabian deserts, and of intertropical India. White seems to be the characteristic of the race, but it is everywhere subject to the influence of climate. The Caucasians are therefore properly enough called the WHITE RACE, though some of them are perfectly black. Their hair, whether melanic or xanthous, is always long and lank, and never woolly like that of the negroes.

II. The MONGOLIAN CLASS has the head almost square; the cheek-bones projecting; the nose flat; the nasal bones and the space between the eyebrows nearly on the same horizontal plane with the cheek-bones; the arches of the eyebrows scarcely to be perceived; the nostrils narrow; the chin slightly prominent. The face is broad and flat, with the parts imperfectly distinguished; the space between the eyes flat and very broad; nose flat; cheeks projecting, round, and narrow; the linear opening of the eyelids extending towards the temples; the inner corner of the eye sunk towards the nose, and the upper eyelid at that part continued into the lower by a rounded sweep. The complexion is generally olive, which is sometimes very slight, and approaching to yellow, or what is called sallow; and none of this class are known to be fair-complexioned. The iris of their eyes is black; their hair black, straight, and strong, but seldom curled, or in great abundance; and they have little or no beard. In this class are comprised the numerous tribes that occupy the central, north-east, east, and south-east parts of Asia; the Chinese and Japanese; the people of Tibet, Boutan, and Indo-china; the Fins and the Laplanders of the north of Europe, and the Esquimaux, who live along the shores of the Polar Sea, in America and Greenland. The colour of the class is influenced in a slight degree by climate; those of them, and those parts of the body most exposed to the sun and the air, being the darkest.*

III. The ETHIOPIC, or BLACK RACE, have the head narrow, and compressed at the sides, the forehead very convex and vaulted; the cheek-bones projecting; the nostrils wide; the jaws long; the front teeth of the upper jaw turned obliquely forward; the lower jaw strong and large; the skull generally thick and heavy. The face is narrow, with the lower part projecting; eyes prominent; nose spread, and almost confounded with the cheeks; the lips, particularly the upper one, very thick; the jaws prominent, and the chin retracted. The skin of this class, and the iris of the eye, are deep black; the hair black and woolly; characteristics that vary less in the negroes than in the two former classes, for this very obvious reason, that the Ethiopic race are to be found native mostly in tropical climates, where there is little variety of temperature; and not like the Mongolian and Caucasian races who are spread over all climates, from the equator to the Polar Sea. In this class are comprised all the natives of Africa to the south of the Sahara and Abyssinia; also the natives of New Holland, Van Diemen's Land or Tasmania, Papua, or New Guinea, New Britain, the Solomon Isles, New Georgia, the New Hebrides, New Caledonia, the Feejee Islands, and also various tribes throughout the Indian archipelago.

IV. The AMERICAN CLASS approaches the Mongolian. The cheek-bones are prominent, but more arched and rounded than in the Mongol, without being so angular, or projecting at the sides; the orbits almost always deep; the shape of the forehead and the crown often artificially modified; the skull generally light. The face is broad, without being flat; the features, viewed in profile, are prominent, and deeply marked; the forehead low, eyes deep-seated, nose rather flat, but prominent. The skin is red, more or less dark, or copper-coloured, and approaching to black, according to climate and other circumstances. The hair is like that of the Mongolian class; and they have little or no beard. In this class are comprehended all the native American tribes and nations, excepting, of course, the Esquimaux, and the descendants of European and African colonists.

V. The MALAY CLASS has the top of the head slightly narrowed, the forehead a little arched, the cheek-bones not prominent; the upper jaws a little pushed forward; the prominence of the parietal bones strongly marked. The face is less narrow than that of the negro, somewhat advancing in the lower part, when seen in profile; the features generally more prominent than those of the negro, the nose full, broad, and thick towards the point, or what is called a bottle-nose. The colour of the skin is brown, or tawny; the hair black, soft, curled, and abundant. In this class are comprised all the natives of the islands of the Pacific Ocean (excepting those already mentioned as belonging to the Ethiopic class); likewise the dominant nations of the Indian archipelago.

Such is Blumenbach's classification, which has been very generally adopted. Some naturalists have reduced the classes to *three;*† considering the Malay class to be only

* Dr. Abel, physician to the last British embassy to China, mentions in his volume of travels, that when any of the Chinese boatmen cast off their clothes for the purpose of leaping into the water to push along the boats, they appeared to be dressed in light-coloured trowsers, though quite naked.

† M. G. Cuvier gives only three distinct well-marked races:—The *white* or *Caucasian*, the *yellow* or *Mongolian*, and the *negro* or *Ethiopian*. He acknowledges, that neither the *Malays* nor the *Papous* (New-Guinea man) can be easily referred to any one of these three great races; but he says, that he does

a sub-variety of the Caucasian, and the American as a variety of the Mongolian. Others carry the number to *eleven* or *fifteen* classes, and not without reason; for all the tribes comprised under each of Blumenbach's five classes, so far from having exactly the same characteristics, really differ in some cases from each other as much as the class under which they are ranged differs from the other classes; and of such varieties the Caucasian class comprises the greatest number. The Ethiopic class likewise comprises a great number of very well marked varieties; and there is really more difference between a Bojesman, a Caffre, and a Soudan-negro, who all belong to this class, than there is between a Malay, a European, and a Caffre, belonging to different classes. From this example, it will be easily perceived that the division of mankind into three or five, or any small number of classes, is extremely arbitrary; and it would be no easy matter to prove that all the people of the world would fall under one or other of them. But this branch of science is still in its infancy; and there is no part of natural history that offers a wider or a more interesting object of study to the scientific naturalist.

Revelation communicates to us the important facts of the common origin of the first race of men, and of the miraculous dispersion of the descendants of the survivors of the Noahic deluge, effected, according to the sacred historian, by a confusion of language; but which may, in all probability, have been accompanied by a change of organization. This is a field of inquiry beset with perplexities; but of one thing we cannot entertain a doubt, namely, that mankind are all the creatures of the same God; and the only questions of real importance concerning their differences are, Whether or not they are all equally susceptible of the same moral and intellectual culture? Will the same causes produce upon all of them the same effects? — and particularly, What are the effects resulting from the domination of one class over another, and of the mixture of races in the same country, produced by alliances and intermarriages?

This last question about the mixture of races, and the domination of one over another, would have been of little importance if the earth had remained divided among them according to laws established for each; if the people of the copper-coloured race had kept exclusive possession of America; if the Mongolian races had never passed the frontiers of Eastern Asia; if the Malays had never been disturbed in their own islands; if the Ethiopians had remained masters of Africa; if the Caucasians had never been disturbed in Europe, and had never gone out of it. But the equestrian tribes of the Mongols have spread from the centre of Asia, and overrun other regions, and extended their dominion not only over other people of the same class, but also over Caucasian races with whom they have intermixed. The Caucasians, in their turn, have not only sought to rule over people of their own class, but have gone to every part of the world, and mixed with every other race. In Africa, they have established themselves along the coast of the Mediterranean and of the Red Sea, and a good way inland from both; on the coasts of Senegal, Gambia, Guinea, Congo, and at the Cape of Good Hope; on the channel of Mosambique and the neighbouring isles. In Asia, they have mixed with the Mongols in Persia; they are masters of India, and of many of the islands between the Indian and the Pacific Oceans, where are found commingled on the same soil Negroes, Mongols, Malays, and Caucasians, having each their own colour, features, manners, customs, languages, and religions. In the Pacific Ocean their dominion is already felt; and there is little reason to doubt that the multitudinous islands scattered over it will ere long become peopled with a European race.

But of all the mixtures of races, the most important, and the most worthy of notice, is that which for more than three centuries has been going on in America. The Caucasians, not content with establishing themselves there, have transported to the same soil millions of African negroes, and even many Malays and Chinese. The North-American Indians have always retreated before the intruding Caucasians, and their numbers are diminishing very rapidly; they seem, in general, to be incapable of civilization, and to be instinctively repugnant to mingle with the whites. But this is not the case with the negroes, who are very numerous in the West India islands, in

not find the characters of the former sufficient to distinguish them from the Hindoo variety of the Caucasian race, and the Chinese variety of the Mongolian; and in regard to the latter (the Papous), he asks, whether they may not be negroes which have anciently wandered over the Indian sea. The inhabitants of the north of the two continents, the Samoides, the Laplanders, and the Esquimaux, come, according to some, from the Mongolian race; while, according to others, they are only degenerate shoots from the Scythian or Tartar branch of the Caucasian race. The Americans themselves, he adds, have not yet been distinctly traced to either the one or the other of our races in the Old Continent; and nevertheless they have not characters sufficiently precise and constant to form a particular race.—*Regne Animal.* tom. i. 1829.

the southern states of North America, and in the northern and eastern countries of South America; for their numbers multiply in as great, if not in a greater proportion, than the numbers of the Europeans. In Mexico and South America the indigenous races have continued to multiply since the conquest, and the intermarriages of these people with Europeans, Negroes, and Malays, have produced new varieties, insomuch that the population of that part of the world exhibits phenomena of which the state of things in Europe could never have given us the least idea. We shall briefly describe the result of the intermarriages to which we have alluded: —

Children produced by the mixture of different classes exhibit the medium complexion and features (or nearly so) between their parents; a law that holds universally good, so far at least as climate and other external physical circumstances are concerned, these apparently making not the smallest difference. From a refinement of vanity, the people of Spanish America have invented different names to distinguish the offspring of the various intermixtures of the dark-coloured races with the whites, and among themselves. In the first generation, the children of a European and a negro are called *mulattoes.** In colour, figure, and moral qualities, the mulatto is a medium between the European and the African. The colour is more or less yellow, brown, or tawny, according as the European father may have been fair or dark, and the features are a medium between those of the parents. There is no redness of the cheek. The hair is curled and black, but longer than that of the negro, and the iris is dark. In cleanliness, capacity, activity, and courage, they are decidedly superior to the negroes.

Europeans and mulattoes produce *tercerons* (sometimes also called *quarterons*, *moriscos*, and *mestizos*.) The hair and features are European, the former having nothing of the grandmother's woolly curl; the skin has a slight brown tint, and the cheeks are red. In the Dutch colonies they have often blue eyes and fair hair. In political and civil rights, these, in countries where slavery exists, are classed with the mulattoes.

Europeans and tercerons produce *quarterons* or *quadroons* (*ochavones*, *octavones*, or *albinos*), who are not to be distinguished from whites; but formerly (in Jamaica at least), they were not entitled to the same legal privileges as Europeans or white creoles, because there is still a contamination of dark blood, though no longer visible. In the fifth generation, the children of Europeans and quarterons are called *quinterons* (or *puchuelas*), but they have no remaining trace of the alleged impurity, so that even the law was satisfied that they were sufficiently white to enjoy their protection, and the privileges of freedom. By an opposite course of proceeding, the mulatto offspring of Europeans and negroes may be reduced to the African character. If a mulatto be paired with a negro, and the children again and again with negroes, the fourth generation is perfectly black.

The offspring of Europeans and Indians are named *mestizos* or *mestees*. The hair is black and straight; the iris dark; the skin varies according to the tint of the American parent. The mestizo is much lighter than the mulatto; and, as many American Indians are nearly as fair as Europeans, mestizos are often not distinguishable in colour from the latter. "A mestizo," says Humboldt, "is in colour almost a pure white, and his skin is of a particular transparency. The small beard, and small hands and feet, and a certain obliquity of the eyes, are more frequent indications of the mixture of Indian blood, than the nature of the hair."† European fathers and mestee mothers produce *quarterons*, *quatralbi*, or *castizos*, corresponding to tercerons in the negro breed, and not distinguishable from Europeans. Quarteron women with Europeans produce *ocharons* or *octavons*; and Europeans with ochavon women, *puchuelos*, who are not distinguishable, in any respect, from genuine Europeans.

The offspring of negroes and Indians are called *Zambos* or *Sambos*; sometimes also *mulattoes*. Negroes with mulattoes produce *zambos de mulata* (*griffos* or *cabros*); a European and zambo, a mulatto; an American and zambo, a zambaigo. The offspring of the zambos are styled by the Spaniards, in derision, *cholos*; that of negro and zamba is called *zambo-prieto* (black zambo). In the English colonies, the offspring of a negro or negress, with a mulatto man or woman, is also called *Sambo*.

Similar mixtures of races have taken place wherever two or more of them have intruded upon each other's domains. The Mongolian races of Persia have become almost Caucasian, by repeated intermixture with Caucasian blood; the higher classes always preferring Circassian and Georgian women, or others of kindred race from the Caucasus. At Banka, the children of a Chinese and a Malay are called *teko*; and in India, of an Indian with a negress, are called *bouganese*. At the Cape of Good Hope, the children of a European with a Hottentot are called by the not very elegant Dutch name of *bastaards*.‡

The classifications of mankind, arising out of their various relations in society, will form in part the subject of the next chapter. We conclude the present with a statement of the numbers of the human race, according to the estimates of M.M. Malte-Brun and Balbi, adding, in the words of the former distinguished geographer, "that all the calculations which have been made upon this subject are chimerical, and that it is impossible to state any which shall even approximate to the truth." Our own estimate will be found in the concluding portion of the 3d section of the succeeding chapter.

POPULATION OF THE GLOBE.

	Malte-Brun.	*Balbi.*
Europe, . . .	170,000,000	227,700,000
Asia, ...	320,000,000	390,000,000
Africa, ...	70,000,000	60,000,000
America, . . .	45,000,000	39,000,000
Oceanica, . . .	20,000,000	20,300,000
Total, ...	625,000,000	737,000,000

* The term *Creole* is frequently used erroneously as synonymous with mulatto; but it signifies only those who are born in the West Indies or America, of *two* white or *two* black parents, and is never properly applied to people of mixed origin.

† Humboldt's Political Essay on the Kingdom of New Spain.

‡ Lawrence's Lectures.

CHAPTER V.

POLITICAL GEOGRAPHY, OR GEOGRAPHICAL SCIENCE IN RELATION TO MANKIND IN SOCIETY.

In this chapter, we shall in the first place examine the social condition of man as influenced or modified by external causes, and then proceed to consider the classifications of mankind in respect to language, religion, and government.

§ 1. *The Influence of External Causes on the Social Condition of Man.*

M. Victor Cousin, in his "Introduction to the History of Philosophy," states, that let any country be examined in reference to its physical geography, and it will then be possible to tell *à priori* what is the condition of man in that country, and what part its inhabitants will act in history. Like other general rules, this assertion is liable to exceptions. Take, for example, the vast regions of temperate America and of Australia, and although no change has taken place in their physical condition, in these we find the white or Caucasian race forming wealthy and populous communities, where but a few years since, the thinly-scattered aboriginal tribes found only a scanty and precarious subsistence. It cannot, however, admit of doubt, that a connexion subsists between the state and condition of man and the circumstances in which he is placed; but the branch of science to which this inquiry belongs is as yet in its infancy, and although it has in all ages attracted the attention of philosophic inquirers, we are still at a loss to account for any but the more obvious effects of those physical circumstances to which mankind are undeniably subjected, and of which the greater number of them are so completely the creatures.

The object to the attainment of which man first directs the exercise of his physical powers and rational faculties, is a sufficiency of food, and a protection from the elements by raiment and a dwelling-place. In these exertions originate all his skill in the arts, and all his knowledge of science. Hence we must expect to find the full expansion of man's powers, not in regions of the globe where, on the one hand, the physical circumstances of a country may be too rigorous to admit of improvement, or, on the other, where an enervating climate, and an abundance of aliment spontaneously yielded by the soil, obviate the necessity of human exertion, but in those warmer portions of the temperate zone, where nature yields everything abundantly to industry, but little or nothing without it, and where there are physical obstacles to be overcome, sufficient to call forth man's higher powers, without overwhelming him with difficulties. Yet even this much cannot be stated without exceptions; for under the equator itself we find in the Malays an example of a race as acute, intelligent, active, and enterprising as any that the most favoured region of the temperate zone has produced. They are indeed ignorant of science, and depraved in morals, but this condition is owing to circumstances, to which we shall advert in another portion of our work.

In casting a rapid glance over the globe, we perceive at once that the parts that enjoy the mildest and most equal temperature, that most abound in rivers, and present the longest line of sea-coast thus possessing the easy means of communicating with other places, are or have been formerly also the most numerously peopled, and the most anciently civilized. In all countries, whatever may be their condition as to civilization, it is along the gulfs, at the mouths, or on the banks of rivers, that we find the densest population. Mankind, in their migrations and their increase, are subjected to laws as invariable as those that guide and control the lower animals. They spread themselves in all the places that offer them the means of subsistence, and stop where they find these no longer; and if we inquire, what is the order which they follow in their migrations, we find they are distributed by families, in the same manner as the waters are divided. If, for example, in any country, we ascend from the mouth of a river to the sources of both the main stream and its tributaries or affluents, we generally find, upon both banks, people belonging to the same family, speaking the same language, or dialects of the same language, and having similar manners and customs. This fact, which seems to exist in all countries, is most easily observed in those of Europe. Several large rivers rise in the Alps, near each other, but run to the sea in different directions. If

we ascend the Po and its affluents, we find on all their banks people of the Italian race; if we ascend the Rhine and its affluents, we find on both banks people of the Teutonic, Dutch, or German race; if we ascend the Rhone and its affluents, we find people who speak the French language; but in the mountains, where all these river-basins meet, there is found a confederation of different people, consisting of French, Italians, and Germans. These divisions are independent of political combinations, and of the kinds of government to which the people are subjected. Thus, those who dwell in the basin of the Rhone all speak the same language, although they are distributed among five independent governments, namely, France, Sardinia, Valais, Vaud, and Geneva. The people of the Rhine are all of the Dutch race, although divided among the governments of France, Switzerland, Prussia, Holland, and many others. The people of the basin of the Po belong all to the Italian race, although some of them live under the Swiss confederation, some under Italian governments, and others are subjects of Austria. Diplomatic arrangements and political violence often disturb the natural divisions of people, but this order, though often shaken, can hardly ever be effaced. Unity of government will be found equally powerless in uniting people who are divided by natural arrangements. Piedmont and Savoy have been for centuries subjected to the same government, and yet the manners, language, and interests of the inhabitants of these two countries are as distinct at this day as before they were politically united. In like manner, in Switzerland, Dutch, Italians, and French are united under the same federal government, yet each race preserves its distinctive characteristics. In France, successive governments have employed every possible means to give unity to the diverse races subject to their authority. The territory has been cut up into shreds; uniform legislation, administration, and systems of education, have been introduced into that country, and yet the desired object has not been attained. In France there are almost everywhere two idioms, that of the country and that of the seat of government; the former spoken by the mass of the population, and having for its natural limits the crests of the mountain ridges; the latter spoken out of its native country only by the agents of government and by the educated classes. Nor are the interests of these divided races less distinct than their languages. The same phenomenon is exhibited on a still greater scale in China. That country is divided into many natural provinces by the water-sheds of its river-basins; each of these provinces has its own dialect and separate interests; and the agents of government and the literary class are obliged to communicate with the people in the vernacular tongue of the latter; but everywhere carry on their intercourse with one another by means of the language of Kiangnan, the seat of the Imperial court under the last native dynasty. India, under the dominion of the Moguls and the British, is another instance; and almost every other country exhibits something of the same kind, varying, of course, with different modifying circumstances.

In considering mankind under a more extended view, we see them divided into great masses, and following the grand divisions of the globe, just as we have seen them divided into great families according to the configuration of their country, and the direction of its mountains and streams. Thus the tribes who dwell in central Asia, and on the banks of the rivers that flow from it to the east and the south, are, almost without exception, branches of the Mongol stock. Those inhabiting the numerous islands of the Pacific ocean belong, with some well-defined exceptions, to the Malay race. The original inhabitants of America were all of the copper-coloured race; and the Africans, except those of the north and the north-east, are all of the black race. Europe, again, and Western Asia, appear to be the native seat of the Caucasian, or white race. Races thus appear to be distributed in a manner still more regular even than plants. The great distinctive races occupy each its own grand division of the continents; the particular families of each race have found their way downwards to the mouths of the rivers, or have ascended to their sources, taking possession of the country through which these flow; and it is remarkable, that the points where the continents, or the great divisions of any of them, touch or make the nearest approach to each other, are often occupied by people belonging sometimes to one race, sometimes to another. The northern outskirts of America are peopled by the Esquimaux, who appear to be allied to the Mongol race; and the coasts of Africa nearest to Europe and Asia are peopled by Caucasians.

We do not know historically how the descendants of Noah were spread over the earth, or how the various characteristics that now distinguish the races of men were produced among them. It is however easy to suppose, that as one family after another left their primitive settlements to wander into new lands, they became more and

more scattered, till at last only a few may have kept together; and these, penetrating into some wilderness, may have lost all the traces of ancient civilization, and recollection of their origin, and become in time the founders of new races modified by the natural circumstances in which they were placed, and the originators of a new kind of civilization peculiar to themselves, and perfectly distinct from that which was making progress in other parts of the world. The Bramins of India have a tradition that their fathers came into the country by the pass of Hurdwar, and possessed themselves progressively of the banks of the Ganges and its affluents even to the sea. The Chinese have a similar tradition of the founders of their empire, who, they say, had their first abode in the mountains of the north-west, and gradually took possession of the plains as they became more and more fit for occupation, by the drying up of the waters that abounded in the land. The Indo-Chinese, who possess the eastern peninsula of India, and are all of kindred race, appear also to have descended in separate bodies from the northern mountains, along the courses of the rivers. In that peninsula, the three great valleys that form the mass of the country are each occupied by a people speaking the same language, but a language distinct from those spoken in the other valleys. We have also a very familiar illustration in the history of one class of European settlers in the native forests of America. The *squatters*, those pioneers of colonization, who proceed into the wilderness, and settle themselves for a time on particular spots, become, as a natural consequence of the circumstances in which they are placed, very savage; and were their movements not rapidly followed up by settlers of a better class, they would, at no very distant period, although the off-sets of a highly civilized community, become as wild as the red men they supplant, and lose, most probably, all remembrance of their original country, and the manners and customs of their fathers.

But in whatever manner it may be accounted for, it is not less the fact, that as the various regions of the earth have become successively known to those Asiatic and European nations, of whose historical records we are in possession, from the earliest dawn of history down to the date of the latest voyage of discovery, all of these have been found already possessed by races of people varying, according to circumstances, in their degree and kind of civilization. And whether we consider them to have degenerated from the civilization transmitted from the antediluvian world by Noah and his sons, or to have been originally as savage as some of them are found at the present day, nothing seems more easy than to determine the cause of the successive development of some, and the stationary condition of others, although both may be found in the same vallies, or along the course of the same rivers. Looking at those parts of the globe where civilization has made the least progress, we find, as we have already observed, that there population is the scantiest; and where concentrated, it is in bays or on the sea shore, or at the mouths of rivers and the course of their streams. If the inhabitants wander into the interior of the country, it is only for the purpose of hunting, and even in these excursions they generally follow the course of the waters, (whether ascending them or descending.) This is observed in the north of Asia, throughout America, in New Holland, and wherever else cultivation has made little progress. When a coast, however fertile its soil, is not intersected by any considerable stream, it is either entirely deserted; or only occasionally visited by some wandering tribes. Thus a great part of the north-east coast of Asia, a still more considerable part of the west coast of America, and almost the whole coasts of Arabia, Africa, and New Holland, are either uninhabited or have a very scanty population. Wherever we find a people half barbarous, in the uncultivated interior of a country, it is only when they have already reached the pastoral state, like the Bedouin Arabs, the Mongols, and Tartars of Central Asia, and some tribes of South America. The causes which, in uncultivated countries, thus carry the people to the banks or the mouths of rivers, are easily discerned. The quantity of food which the earth spontaneously supplies for the use of mankind is extremely limited. A people, therefore, who have not yet advanced to the pastoral or the agricultural state, are attracted towards lakes, rivers, and gulfs, where they enjoy at once the advantages of fishing and hunting. Animals are drawn to the same places by a more plentiful supply of food, and there of course they are most readily met with, and most easily become the prey of man. In such places, also, alimentary plants are more abundant, a greater depth of vegetable earth or mould rendering the soil more fertile; the climate is milder, the atmosphere is more humid, and the air circulates more freely than in the interior districts. Such localities are also found to possess a greater variety of plants, the action of the waters and the winds spreading over the valleys, the various vegetable productions of the higher grounds. A valley traversed by a river may generally be repre-

sented as a triangle, whose top is formed by the junction of two hills and the base by the seashore; hence it follows, that the more nearly we approach the mouth of a river, the more extensive is the space of vegetative earth that we meet with, and the nearer we are to the spot where cultivation must have originated.

Besides supplying from their bosom so considerable a part of human subsistence, multiplying in certain places the species of plants, and attracting animals, rivers afford the means of transport across wastes otherwise untraversable. Lands abandoned to nature are almost always covered with dense forests, that bear no resemblance to those met with in cultivated countries. In the latter, the underwood is cut down and removed; the trees seldom or never fall through age; the surface-water is carefully drained off, and the channels of the brooks and rivers kept clear. But in the natural forest, nothing is cleared away; shrubs and bushes cover the ground, and obstruct the passage of the hunter or traveller. The trees, left to the period of their natural decay, fall through age, and contribute to render the country inaccessible. Lastly, the leaves and other vegetable remains, and earth carried away by the rains, stop the flow of the waters, turning them from their natural course, and converting immense plains into marshes, which soon abound in insects and reptiles. Into such places even animals cannot without difficulty penetrate, and when man attempts to follow them, he effects his purpose only by keeping in their track, along which he pursues his way with pain and toil, and through a thousand dangers. Rivers in wild wood-covered countries do not present the same facilities for navigation, as in cleared and cultivated regions. Large trees often fall into their channels, and by obstructing the current render navigation dangerous. Still, however, in spite of difficulties of this nature, the inhabitants of the banks of rivers, by whom the art of building canoes has been acquired, find in the waters more available means of transport than those that the land offers. The voyagers need only leave themselves to the current, in order to get through immense tracts of country. The ease of such descents, and the difficulty of returning against the stream, contribute in no small degree to accumulate a population at the mouths of rivers and in gulfs.

The causes which induce savage tribes to fix their abodes in the shelter of some deep bay or at the mouths of rivers, contribute to their further development. From such points as these, cultivation and population gradually ascend the valleys; villages are formed at the confluence of the streams; which by and bye become towns and cities, the centres from which civilization and knowledge pervade the country, and then people begin to forget their past condition and to wonder from whence all their possessions and blessings have flowed.

That progressive developments such as these have often taken place in the world there is little reason to doubt; and the very thing is now in progress before our eyes, on a larger scale than the world has ever before witnessed. Great part of North America is occupied by the basin of the Missouri and the Mississippi and their affluents. A small party of French colonists settled themselves at the mouth of the mighty stream, and built New Orleans. From that point they ascended the river till they met their brethren, who had been, in the same way, spreading themselves along the St. Lawrence; and the two tides of colonization would doubtless ere long have filled the basins of both rivers with a French population. But ere this could be accomplished, their progress was arrested by the counter tide of the equally enterprising and more powerful colonists of another nation, who, taking them in flank, as it were, began to descend from the eastern borders of the great valley, and are now rapidly filling it in the very way we have assumed to be the natural one in the progressive expansion of isolated tribes. They are bringing with them, it is true, the seeds of civilization, and the ready means of rapid improvement; and the number of people that are hurrying continually to the favoured region, will fill more space in the course, perhaps, of a few generations, than the original colonists of Louisiana, left to themselves, would have filled in a thousand years. Such is the influence that waters have upon the distribution and the civilization of mankind; but we must not overlook the fact, that they are only means to an end, and that these means may be rendered useless or mischievous by many circumstances of various kinds.

Having thus seen, in a general manner, the causes which determine a people in the preference which they give to certain places over others, and that contribute to hasten, to encourage, or to arrest their progress, it remains for us to explain the special causes which, in the principal divisions of the globe, have kept their inhabitants in barbarism, or made them advance in civilization. This our limits would allow us to do only very briefly, and therefore we reserve the consideration of them till we describe the various countries, in the body of our work.

Before concluding this section, for much of the matter of which we have been indebted to Mr. Lawrence's "Lectures on Physiology," &c. and Comté's "Traité de "Legislation," it may be proper to advert, briefly, to the important subjects of the *duration of human life*, the *proportion of births to deaths*, and the *relative proportion of the number of the sexes;* all of which, it is believed, are influenced or modified by circumstances external to man, and connected chiefly with his condition in society.

The natural limit of human life seems to be from eighty to ninety years. Few men survive that period; the majority die long before they even approach it. Of all new-born infants, one out of *four* dies the first year; *two-fifths* scarcely attain their sixth year; and before the twenty-second year, *one-half* of the generation is consigned to the grave. The order which Death observes in cutting off his victims is one of the most wonderful phenomena in nature. The causes by which it is effected are too numerous and too complicated to be here considered in detail. The unhealthy nature of certain occupations, the impetuosity of the passions, and the corruption of manners, prove no less fatal to life than the original weakness of the human frame. In general, the *mean duration* of human life is between thirty-eight and forty-two years; that is, out of thirty-eight or forty-two individuals, one dies every year.

This proportion varies in a singular manner, according to sex, localities, and climates, and even from one province to another. In France the mean mortality is one individual in 39.98, or 100 in 3998; whilst it is one in 26.3 in the department of Finisterre, and only one in 53.5 in that of the High Pyrenees. In Belgium and Holland united, the mortality in 1828 was one in 43.8, while in the province of Drenth it was one in fifty-five, and in that of Naumur one in 57.9. In the north of Holland it was one in 34.5, and in Zealand one in 31.4. In Sweden the mortality was one in 44.69, and in Russia one in forty. In England the mean number of deaths is one in forty-nine, while in Wales it is one in sixty.

The mortality is much greater in towns, and especially in large towns, than in the country. In Paris the mortality is reckoned at 1 in 33. Wargentin calculates that in Stockholm 1 man in 17 dies, and 1 woman in 21.* According to Price, there dies in the large towns of England, every year, 1 in 19 or 23; in the small towns, 1 in 28; and in the country, only 1 in 40 or 50.

In the ordinary course of nature, at least amongst civilized nations, the number of births exceeds the number of deaths. But the proportion varies with the situation. In the country, there is frequently 1 born yearly for every 22 of the population. In towns, the proportion is less favourable, being often 1 to 40, more generally 1 to 35. In this respect, climate occasions a remarkable difference. The most healthy climate is not always that in which there are most children born; for example, in Denmark, the proportion of births to the existing inhabitants is as 1 to 31; while in Norway, a healthier country, it is as 1 to 34. In France, the proportion is as 1 to 32. An author who has made very accurate Statistical Researches, has drawn up a table of the average number of children in a family in the different countries of Europe; the following are some of his results:—†

In Sweden, the number of children to a marriage is	3.62	In the Department of the Lower Rhine, along with Jura, in France,	5.02
In Muscovy, in Russia,	5.25	In La Vendée, including Morbihan, Id.	5.49
In Holland,	4.20	In the Department of the Loire, with the Low Alps, Id.	5.54
In Belgium,	5.27	In the Department of the Eastern Pyrenees, Id.	5,17
In a part of Scotland,	5.13	In the Canton of Fribourg,	5.35
In England,	3.50	In Savoy,	5.65
In Moravia and Silesia,	4.81	In the Government of Venice,	5.45
In Bohemia,	5.27	In Portugal,	5.14
In France,	4.21		

We see by these examples, that the ancient opinion, which considered the north as the *officina gentium*, the cradle of nations, although supported by many philosophers besides the antiquary Rudbeck, is altogether destitute of foundation.

The number of births is directly and materially affected by causes of a moral and political nature. The difficulty of finding subsistence is unfavourable to the increase of marriages, and it is only from marriages that a state can hope to see a numerous race of children arise. Libertinism, a community of wives, polygamy and unlimited divorce have never had a salutary influence on population. It has been shown by the most authentic calculations, that of two bodies of individuals, equal in number, that which

* *Mémoires divers sur les tables de mortalité, &c.*, in the Memoirs of the Academy of Stockholm. Vols. xvi. xvii. xxviii. and xxxi.

† M. Benoiston de Chateauneuf, *Notice sur l'intensite de la fécondité en Europe au commencement du xixe siecle*, inserted in the 9th volume of the Annales des Sciences Naturelles, 1826.

lives in the marriage state, produces more children than that which promiscuously indulges in the commerce of the sexes. *The proportion of births to marriages*, on an average, and in a country of some extent, can scarcely be more than five, or less than three births to one marriage. The ordinary proportion, in the most civilized countries of the world, is four births to one marriage. *The proportion* between *births and deaths* is, one year with another, from 101 to 150 for every 100. This last proportion indeed occurs only in some provinces of small extent, and singularly favoured by nature. Every proportion stated as higher than this, in an extensive country, ought to be viewed with suspicion, unless verified by calculations and registers of undoubted correctness and authenticity.

Euler has constructed the following Table, by means of which, we may see at a glance, in how many years the population of a country may be doubled under certain conditions.*

IN A COUNTRY OF ONE HUNDRED THOUSAND INHABITANTS, THE MORTALITY BEING ONE IN THIRTY-SIX.

The Deaths being to the Births, as	*The Surplus of Births will be*	*This Surplus will make of the sum of the Living.*	*The Doubling of the Population will take place in*
10 to 11	277	$\frac{1}{361}$	$250\frac{1}{139}$ years.
—— 12	555	$\frac{1}{180}$	125
—— 13	722	$\frac{1}{138}$	96
—— 14	1100	$\frac{1}{90}$	$62\frac{3}{4}$
—— 15	1388	$\frac{1}{72}$	$50\frac{1}{4}$
—— 16	1666	$\frac{1}{60}$	42
—— 17	1943	$\frac{1}{51}$	$35\frac{3}{4}$
—— 18	2221	$\frac{1}{45}$	$31\frac{2}{3}$
—— 19	2499	$\frac{1}{40}$	28
—— 20	2777	$\frac{1}{36}$	$25\frac{3}{40}$
—— 22	3332	$\frac{1}{30}$	$21\frac{1}{3}$
—— 35	4165	$\frac{1}{24}$	17
—— 30	5554	$\frac{1}{18}$	$12\frac{4}{5}$

The same mathematician, founding on data extremely favourable to the propagation of the species, has constructed a table, the general result of which is, that the human race might be tripled in twenty-four years, and that at the end of three hundred years, the posterity of one couple might amount to 3,993,954 individuals.

Taking the total number of the human race at seven hundred millions, the ratio of the deaths to the living population as one to thirty-three, and that of the births to the living as one to twenty-nine and a-half, we shall have, for the whole globe,

	In one Year,	*One Day,*	*One Hour,*	*One Minute,*
Births, .	23,728,813	65,010	2,708	45
Deaths, .	21,212,121	58,120	2,421	40

Whence it follows, that the sum-total of the human race would, in one year, be augmented by an accession of 2,516,692 individuals, were it not for wars and pestilences. This augmentation would, in one hundred years, bring the number of men up to 3,216 millions. The earth might, perhaps, support a still greater number; but all the records of history seem to concur in showing that the increase of the human race has hitherto advanced at a much slower rate.

The *proportion between the numbers of the two sexes* is a matter of great importance, both in statistics and legislation. In Europe there are always more boys born than girls, in the proportion of sixteen to fifteen, of twenty-one to twenty, or, according to others, of twenty-six to twenty-five. On the other hand, the mortality also is greater amongst the male children, in the proportion of nearly twenty-seven to twenty-six; in consequence of which, about the fifteenth year, the numbers of the two sexes are brought almost to an equality; there is, however, still a surplus in favour of the males. But this surplus in the number of the men, even though it were three or four times greater, is carried off by wars, by dangerous voyages, and by emigration, to the casualties of which the female sex are less exposed. Thus, the final result of this is, that in our climates the women are always more numerous than the men. This difference is particularly observable at the conclusion of a long war.

* Euler, Tables communicated to Sussmilch, Ordre divin, chap. viii. §§ 152, 156, 162.

According to Wargentin, it amounted in France, after the seven years' war, to 890,000 in twenty-four or twenty-five millions of souls; in Sweden, after the Northern war, about 127,000 in a population of two millions and a half; and in England, according to the calculations of Rickmann, it was in 1811, 388,886 in 9,538,827 souls, and in 1821, 310,543 in 11,261,437.

Some travellers have imagined, that in warm climates there are more girls born than boys; and as the male sex is liable to more rapid destruction in such climates than in ours, the surplus of women must become very great. The researches of Father Parennin in China, the lists of baptisms kept by the Danish missionaries of Tranquebar, the various censuses taken by the Dutch at Amboyna and Batavia, and the observations made at Bagdad and Bombay, by the judicious Niebuhr, and those which have been made in other countries of the torrid zone, have demonstrated that the number of children of both sexes is not there more disproportionate than in Europe.

It has been commonly computed that a district, in which there are 10,000 infants born yearly, must contain in all 295,022 inhabitants of both sexes, of whom 93,003 should be children below fifteen years, and 202,019 persons above that age. Amongst these individuals, there will be, at the most, 23,250 monogamic marriages (the mean duration of which may be estimated at twenty-one years), 5812 widows, and 4,359 widowers, the rest single.

§ 2. *Of the Classification of Mankind according to their Languages.*

Nation, is a general term, applicable to any people, however much they may differ among themselves in respect to religion, language, and civilization, provided they are subjected to the same sovereign power; or in other words, when they form one body politic, independent of every other. It is also used to signify the people of a region, which has proper geographic limits; that is to say, natural boundaries, independently of the political divisions, or the different languages which they speak. Such are the people of France, Italy, Germany, India, who are all called French, Italians, Germans, and Hindoos, though the first speak several, and the last many different languages; and though the Italians, Germans, and Hindoos, are subjects of many different governments. It is also applied to signify the people of any country whatsoever, who speak the same tongue, and its various dialects, independently of the distances which separate them, of the different bodies-politic of which they form a part, of the religion which they profess, and the degree of civilization they have reached. Thus we give the national name of English, French, Spanish, Portuguese, Chinese, Greeks, Armenians, and Jews, to the numerous colonists, whether families or individuals, scattered over the world, which have sprung from one or other of the nations so called. Geographical limits are always the same, although often overstepped by different races of people; political boundaries, again, have no natural permanence, and the people that constitute bodies-politic become at different times members of different nations in respect of government. *Language*, however, is a permanent characteristic, by which one nation may be always distinguished from another; and various authors have accordingly attempted to classify mankind into various *ethnographic families* or *stocks*, according to the languages that they speak.

Ethnographic stock or family, is a term applied to indicate a group of languages related by many analogies, and of which the members present, so to speak, so many family features, that by means of these, we may often recognise the common origin of nations whose migrations and separations history has failed to record. *Dialects*, generally speaking, are different methods of pronouncing a language; but with the endless varieties thus occasioned, different constructions, and even different words, are often intermingled, so as to give the branches of the same original tongue very much the appearance of being totally different languages.

The researches made by Balbi, for the construction of his *Atlas Ethnographique*, have convinced him that the number of known languages amounts to 2000 at least; but the imperfect state of ethnography, he states, has allowed him to class only 860 languages and about 5000 dialects; of which prodigious number, 143 languages belong to Asia, 53 to Europe, 115 to Africa, 117 to Oceanica, and 422 to America. And, in applying ethnography to the five grand divisions of the world, he has divided all known tongues into five classes, which form, so to speak, the ethnographic map of the world.

I. Asiatic languages, subdivided into, 1. The *Semitic* family, comprising the Arabic, Hebrew, Chaldee, &c. 2. The *Caucasian* family, comprising the Georgian, Armenian, &c. 3. The *Persian*, comprising the Zend, the Parsee, the modern Persian, &c. 4. The languages of the Indian region, viz. the *Sanscrit* family, with the Pali and Hindostanee; the *Malabar* family, comprising the Malabar or Maleyalam, Tamul, Telinga, &c. 5. The languages of Transgangetic India, viz. the *Tibetan*, *Chinese*, *Japanese*, *Laos-Siamite*, *Anamite*, *Rukheng-Barma*. 6. The Tartar languages, viz. *Tun-*

gouse, Mandchou, Tartar or *Mongol, Kalmuck, Turkee, Yakoute*, &c. 7. Siberian languages, viz. *Samoied, Yenesei, Koriak, Kamtshadale, Kourilian*, &c.

II. EUROPEAN LANGUAGES, subdivided into six families: 1. The *Basque* or *Iberian*, including the Basque or Escuara. 2. The *Celtic*, comprising the Gaelic, or Irish, or Erse, the Cymraeg, &c. 3. The *Thraco-pelasgic* or *Greco-latin*, comprising the Albanian, Etruscan, Greek, Latin, Romance, Italian, French, Spanish, Portuguese, &c. 4. The *Germanic*, comprising the old High-Dutch, the modern High-Dutch or German, the Frisic, the Neider-Dutch, or Low-Dutch of Holland, &c., the Mœsogothic, Swedish, Danish, Anglo-Saxon, English, &c. 5. The *Sclavonic*, comprising the Illyrian, Russian, Cheskian, Polish, Lithuanian, &c. 6. The *Ouralian*, comprising the Finnish, Lapland, Cheremisse, Permian, Magyar or Hungarian.

III. AFRICAN LANGUAGES, subdivided into five groups: 1. Languages of the Nile region, comprising the *Egyptian family*—ancient Egyptian and Coptic, &c.: *Nubian* family—Nouba, &c.; *Troglodytic* family, the Bisharian, &c. 2. Languages of Atlas, forming the family of the *Atlantic languages*—Amazique, Ertana, Tibboo, Guanche, &c. 3. Languages of Maritime Nigritia, viz. the *Mandingo* family—Mandingo, Sousou, &c.; *Ashantee* family—Ashantee, Intor, &c.; *Ardrah* family—the Ardrah-jidah, Benin, &c. The *Foulah, Woloff, Serere*, &c. 4. Languages of South Africa, viz. the *Congo* family—Congo, Loango, &c.; *Kaffer* family—Kaffer, Beshuana, &c.; *Hottentot* family—Hottentot, Saab, &c.; *Monomatapan* family—Monomatapa, Maconas, &c.; the *Galla* family—Galla, &c.; the *Somauli, Hurrur*, &c. 6. The languages of Inland Nigritia, viz. the *Haoussan* and *Bornouan* families; the languages of *Timbuctoo, Maniana, Kallogi, Baghermeh*, &c.

IV. OCEANIC LANGUAGES, subdivided into, 1. The *Malaysian* family—the Grand-Oceanic, Vulgar Javan, Basa-Krama, Malay, Acheen, Birna, Bugi, Macassar, Tagalog, Bissayo, Mindanao, Chamorie, Radak, New Zealand, Tonga, Tahitian, Sandwich-island, Si-dcia, Madecasse, &c. 2. Languages of the Oceanic negroes and other tribes—Tembora, Sydney, Dory, Tana, Pelew, &c.

V. AMERICAN LANGUAGES, subdivided into eleven groups, comprising a multitude of names not very easy to pronounce, with which we need not trouble our readers. Those, however, whose curiosity inclines them to seek for information through all difficulties, may peruse the 62d page of the *Principes Generaux*, in M. Balbi's *Abregé de Geographie, Troisieme Edition*. Paris 1837.

Among these numerous languages, fifteen are spoken or understood by a great number of persons, or rather extend their domain over a great number of countries. Of these general languages, six are Asiatic, viz. Chinese, Arabic, Turkish, Persian, Hebrew, Sanscrit; eight European, viz. High-Dutch or German, English, French, Spanish, Portuguese, Russian, Greek and Latin. The Malay is the fifteenth, and belongs to Oceanica.

§ 3. *Classification of Mankind according to their Religions.*

MAN, in his anatomical structure, may in many respects closely approximate to the "beasts that perish," but unlike them, he is endowed with the high privilege of cherishing and acting on religious and devotional sentiments, which form part of his intellectual and moral nature. This distinction between mankind and the lower animals is broadly marked, and universal in its manifestation, for it has not yet been proved that any people devoid of religion exists or ever has existed. Mankind everywhere recognise the existence of beings of a nature superior to their own, and who exercise upon them influences for good or evil. These beings they consequently endeavour to propitiate by prayers, offerings, sacrifices, and other demonstrations of respect and veneration; and the various manners in which the sentiment of veneration is manifested, constitute so many different *religions*, the external acts of the votaries of which, resulting from their religious feelings, are *forms of worship*.

Religions may be divided into two classes; the first comprising all religious systems in which the nature of the Supreme Being is misconceived; the second, comprising those that emanate from the idea of *one* GOD, the creator, ruler, and preserver of all things, however much in most part of them this great truth may be more or less blended with erroneous and superstitious notions.*

The forms of worship connected with the first class may be subdivided into a number almost infinite, so great is the variety of religions which have their origin in the superstition and the ignorance of barbarous races. Mankind, in forming their own systems, when undirected by a higher power, have conceived the most extravagant absurdities, and paid their homage to every object in nature. But as we have neither room nor opportunity for entering into such details as even the most superficial classification of the infinite variety of false religions would require, we shall limit our consideration to two, namely, *Fetishism* and *Sabeism*, which in some respects may be regarded as the sources of the greater number of superstitions and absurd creeds upon which all these religions are based.

FETISHISM is the worship of *fetishes*, a word used by the negroes of the west coasts of Africa to designate the living or inanimate natural objects to which fear, gratitude, or any other affection leads them to address religious worship. The elements, the trees, the streams, fire, in short, everything around them, in which these simple and ignorant people observe good or evil properties beyond their comprehension, are the objects of their worship. Fetishism is the religion of a people who are in the

* Three hypotheses have been formed as to the nature of the universe, viz. *materialism*, or *pantheism*, which supposes that every thing is penetrated with a divine spirit; *dualism*, which admits the existence of two eternal beings, God and matter, or the good and bad principle; and the system of the *Emanists*, which represents all beings, the good as well as the bad, as having emanated from a supreme God.—*Cudworth, Intellect. System*, chap. i. iii. *Dupuis, Origine des Cultes.*

lowest stage of civilization, and who have the grossest ideas of the Deity, and the relations that exist between him and man; but it admits of many varieties, from the absurd and grovelling superstitions of the savages of New Holland and Van Diemen's Land, to the more refined, but equally idolatrous notions held by the less barbarous people of Polynesia, Central Africa, and several parts of Asia and America. Human sacrifices and other acts of revolting atrocity are the distinctive characteristic of these religions. Their ministers are a kind of diviners and sorcerers, called *griots* among several African tribes, *angekoks* in Greenland, *jugglers* in America, and *shamans* in Siberia, where the similarity of name has made the Fetishism of that country be confounded with the Samanism or Dalai-Lama worship that prevails in Thibet and Mongolia.

SABEISM holds a higher rank than Fetishism. It is the worship of the heavenly bodies, the sun, the moon, the stars, either separately or together. This very ancient system, spread over all the world, forms a component part of many other false religions; but it exists unmixed only among a few isolated tribes. It derives its name from the Hebrew word *tsabaim* (the hosts, *i. e.* of heaven.)

Sabeism forms an element of systematic or mythological *Polytheism*, a name under which may be classed all those schemes of religious belief in which the attributes of the Deity are personified by separate divine beings. These systems, though barbarous and irrational, are well suited for poetry and the fine arts, and were received amongst the most civilized nations of antiquity. They are of several kinds, very different from each other, but reducible to *three* classes. The most gross is the religion of the *Egyptians*, in which the attributes of the divinity were represented under the figure of animals, which may perhaps account for their hieroglyphic writing. This may be termed *zoomorphism*. In the religion of the Greeks and Romans, human nature, exalted and embellished, served as a model for divers personifications of the Deity. This constituted *anthropomorphism*, and was varied almost to infinity. The worship of national heroes modified the polytheism of the Greeks and Romans. Veneration for the dead, a very natural sentiment, mingled with all religions; and in some it appears to have formed the chief part. This was the case with the Celts, whom, for other reasons, we class among the Polytheists. Amongst other nations, such as the Syrians, Chaldeans, and Phœnicians, the worship of the stars and of the physical energies of the earth appears to have predominated.

The principal religions comprised in the second class are, *Judaism*, *Christianity*, *Mahometanism* or the religion of *Islam*, *Brahminism*, *Buddhism*, the *Religion of Confucius*, *Mythological Naturalism*, *Sintism*, *Magism*, and *Nanekism*.

JUDAISM is a pure Theism abhorrent of idolatry, and those by whom it is professed acknowledge no other revelation but that anciently made to the Jews, as God's peculiar people, through the medium of Moses and the prophets, and recorded in the Jewish sacred books, or the Old Testament of the Christian Scriptures. The Jews have now no existence as a nation, but they live in the expectation of the coming of a Saviour (Messiah), who is to be the founder of a great temporal kingdom, in which they are to be exalted above all other people. The Jews at present known as such, and scattered throughout the world, consist of the tribes of Judah and Benjamin; nothing whatever being known respecting the other ten tribes, except part of the tribe of Levi, which, agreeably to the original distribution of the Levites, is still found among the tribes first mentioned. Those Jews who bear the surname of "Levi" are of the stock of the ancient Levites, and the more sacred portion of the tribe, namely, the descendants of Aaron, are also still known from their name "Cohen" (*i. e.* Priest.) The peculiar office of the latter, in the synagogue or place of worship, is to read the Books of Moses, and on solemn occasions to pronounce the blessing appointed in Numbers vi. ver. 22-27, while the other scriptures and the prayers may be read by any other Jew, he being, in the exercise of his temporary office, called the *reader*. These priests and other ministers must not be confounded, as they sometimes are, with the Jewish *Rabbis* or Doctors, who are a kind of judges in ecclesiastical matters, and interpreters of the law, and who besides are invested with extraordinary powers, extending (theoretically at least) even to life and death. The Jews, in their dispersed condition, offer no sacrifices; they practise the rite of circumcision, keep holy the seventh day of the week as the Sabbath, and observe besides several solemn festivals and fasts, the principal of which are the feasts of the Passover and of Pentecost, the fast in remembrance of the destruction of the Temple, the two feasts of the New-year, the first and second feasts of Tabernacles, and the feasts of Great and Little Purim, in commemoration of the deliverance of the Jews from the machinations of Haman, in the reign of Ahasuerus. Judaism was anciently divided into several sects, the principal of which were the Pharisees, Sadducees, and Essenians, but at present there are only two, namely the *Caraites*, who admit of no rule of religion but the law written by Moses, and the *Rabbinists*, who add to the law the traditions of the Talmud. The Caraites are now reduced to an inconsiderable number, but they are widely spread over several countries, being found in Syria, Egypt, the Desert of Hit (about three days journey, or 120 miles to the west of Bagdad), Constantinople, the Crimea, the Ukraine, Gallicia, Lithuania, and at Doubna, and in the neighbourhood of Kouba, in the regions of the Caucasus. The sect of the Rabbinists includes nearly the whole body of the Jewish people. One branch or sub-division of it, called the *Chasidim*, or by some the Jewish *High-flyers*, sprang up at Miedzyvorz in the Ukraine, between 1760 and 1765. The adherents of this body, who it is said form a majority of the Jewish population of Russian Poland and European Turkey, affect a life of peculiar sanctity and great ardour in their devotional exercises, and probably they are to the other Jews what the Methodists and other pietists are to Protestants generally. The *Samaritans*, now reduced to about 200 individuals, who reside at Nablous and Jaffa, may in some respects be looked upon as a Jewish sect; for though they differ from the Jews in their ceremonies and traditions, and reject the historical and prophetical books of the Old Testament, they acknowledge the divine authority of the Mosaic law, and the five books of Moses. They still sacrifice upon Mount Gerizim or at Nablous. The number of the Jewish people at present is estimated at between four and five millions. The greater portion of this population is found within the limits of Europe, and particularly in the Russian, Austrian, and Ottoman empires. In Asia, the Jews are found principally in Turkey, Persia, Arabia, and Malabar, and some even as far as China. In Africa, they are somewhat numerous in Barbary and the regions bordering on the Nile. A few have found their way into the European Colonies in America and Oceanica.

The Jews, in their chronological computations, date their *era* from the creation, which they consider to have taken place 3760 years and three months before the commencement of the Christian era, which, according to our mode of reckoning, began in the four thousand and fourth year of the world. The Jewish civil year commences with or immediately after the new moon following the autumnal equinox; the ecclesiastical year six months earlier.

CHRISTIANITY extends its beneficent influence over the most civilized countries in all regions of the world. It is divided into an infinity of sects and systems, all professedly founded on the authority of the Holy Scriptures or the writings contained in the Old and New Testaments; of these we can only specify the principal classes:—

A. Christians, who admit, besides the Bible, a supreme human authority in matters of faith. This class is subdivided into the *Latin* or *Western Church*, and the *Greek* or *Eastern Church*.

I. The members of the *Latin Church* denominate themselves *Catholics;* and as they recognise the Pope

or Bishop of Rome for their chief or sovereign pontiff, they are called *Roman Catholics*, and sometimes *Papists*, by those who deny the right of his followers to assume that their sect is the only true *catholic* or *universal* church. The members of the Roman Catholic Church admit the authority of tradition, as well as the decisions of the church assembled in general councils, the latter of which are considered by them to be infallible, although many Catholics ascribe this infallibility also to the Pope. The Romish Church recognises seven sacraments as divinely instituted; it requires a belief in transubstantiation in the eucharist, and in purgatory; it admits auricular confession, the adoration of saints, and worship of images, works of supererogation, indulgences, monastic vows; and enforces, as a matter of discipline at least, the celibacy of the clergy. The church acknowledges not only the first seven general councils assembled before the schism of the Greek Church (except the *quini-sextum*), but also several others convoked by the Popes since the ninth century, the last and most famous of which was the Council of Trent, which sat, with some interruptions, from 1542 to 1563. The Catholics pay great honour and veneration to the Virgin Mary. Indeed she occupies so prominent a place in the Catholic ritual, that some Protestants have, on that account, given popery the name of the *Marian Religion*; and many consider her worship to be nothing else than a continuance of that paid by the ancient Greeks and Romans to their great goddess Artemis or Diana. The Catholic clergy are numerous and wealthy, particularly in Hungary, Spain, Mexico, Peru, and Cuba. There exists among them a hierarchy and ecclesiastical dignities, to some of which, even very lately, considerable temporal power was attached. They assume themselves to be the legitimate successors of the Jewish priests and Levites. Like the priests they offer sacrifices, in the mass, and like both priests and Levites, they lay claim to tithes and the offerings at the altar, in virtue of the divine appointment. The formulas of their worship and their prayers are all expressed in the Latin tongue.

The Roman Church includes within its pale France, Belgium, Poland, Italy, Spain, and Portugal; the greater part of the people of Ireland, and of the Austrian States; about one half of the Prussians; the Swiss, and the inhabitants of the secondary German States; and a considerable number of members in Britain and Holland. In Asia, the *Christians of St. Thomas*, or *Syrian Churches of Malabar*; the *Maronites* of Lebanon; and a great number of united Greeks and Armenians, keep their own liturgies and ceremonies, but recognise the supremacy of the Pope, and the dogmas of the Latin Church. Catholicism is the dominant religion in Mexico, and the New States of South America; and a considerable number likewise of the people of the United States of North America, particularly in Louisiana, Kentucky, Maryland, Columbia, and the Floridas, are Catholics. The members of this church are numerous also in Lower Canada; and are indeed to be found in every European settlement throughout the world.

II. The *Greek* or *Eastern Church* does not recognise the supremacy of the Pope; it rejects the doctrine of the procession of the Holy Spirit from the Son, and it allows communion in both kinds, and a married priesthood. Although the Greeks admit the seven sacraments, which they call mysteries, they do not seem to attach the same meaning to the word as the Latins; it is certain, at least, that they consider two sacraments only to rest on divine authority, namely, baptism and the eucharist, believing the others to have been instituted by the church. They administer confirmation along with baptism, which is made by three immersions. They deny the indissolubility of marriage, and break it for adultery; but they condemn fourth marriages. They do not acknowledge works of supererogation, nor, of course, indulgences. They have, however, like the Romanists, a hierarchy and monasteries, but are subjected to a greater number of devotional practices and more rigorous fasts. The Eastern Church is divided into four principal communions, according to the portion of the proceedings of the first seven general councils, which its members recognise or reject. These four communions are,—

1. The *Greek Church*, calling itself the *Orthodox*, because it acknowledges all the seven general councils, as well as the *quini-sextum*, embraces nearly all the Christian population of the Ottoman and Russian empires, of the kingdom of Greece, and of the Ionian isles, and a great number of individuals of different nations within the Austrian empire, particularly in the Hungarian provinces. The orthodox Greeks recognise for their spiritual head the Patriarch of Constantinople, who has maintained his pre-eminence over those of Antioch, Alexandria, and Jerusalem. *Melchistes* is the name given to the orthodox Christians of Syria and other countries of the Levant, who are not Greeks by nation, but only by religion. All the Russians, and the converts they have made among the diversified subjects of their empire, many of the Poles, the Georgians, and some others, profess this religion, and acknowledge the authority of the *Holy Synod* of the Russian empire, in every matter that respects form of worship. The Russians comprehend, under the general name of *Raskalniks*, all the sects whose creed differs from that of the orthodox church, and of these there is a great number, which it is needless to particularize. The Greeks worship the Virgin Mary, by the name of *Panagia* (the All-holy.) They reject sculptured images, but admit pictures into their churches making them objects of worship.

2. The *Chaldean* or *Nestorian* Church. The members of this church recognise only the first two general councils, and the fathers who lived before the Council of Ephesus, where their doctrine was condemned. They ascribe to Christ two persons or *hypostases*, refuse to give the Virgin Mary the rank of *Mother of God*, abhor the worship of images, and regard Nestorius and Theodorus of Mopsuestia as saints. The greatest number of them dwell in Ottoman Asia (chiefly at the village of El-Kosh near Mousul, where their patriarch resides), and in Persia. The Nestorians established in India call themselves Christians of Saint Thomas, as they pretend to have received the gospel from that apostle. Since 1599, when the members of this Indian church were cruelly persecuted by the fanatical hierarchs of Portuguese India, most of them have joined the Latin Church, preserving, however, communion in both kinds, and the marriage of priests. These Christians are called by the Romanists *United Greeks*.

3. The *Monophysite*, or *Eutychian Church*, the members of which acknowledge the first three general councils, and admit only one nature in Christ, namely, the divine nature incarnate. This church is subdivided into three others, called the Jacobite, the Coptic, and the Armenian.

a. The *Jacobite* derives its name from a Syrian monk of the sixth century, Jacob Baradai, or Zanzalus, who travelled throughout Syria and Mesopotamia, for the purpose of uniting the church of the dispersed Monophysites, and who gave them a hierarchy. The spiritual head of the Jacobites takes the title of Patriarch of Antioch. He is named Ignatius, and resides at Kara-amid, or Diarbekr, in Ottoman Asia. The Jacobites have adopted the worship of saints and images. A great part of them are united to the Roman Church, keeping, however, some particular rites.

b. The *Coptic*, the members of which are named Copts or Christians of Egypt, Nubia, and Abyssinia. The Copts adopt the worship of images; and in two peculiarities are distinguished from other Christians, namely, the use of circumcision along with baptism (more, however, as a national custom than as a religious ceremony), and the observance both of the Lord's-day and a part of the Jewish Sabbath. Their patriarch resides at Cairo, but he takes the title of Patriarch of Alexandria and Jerusalem. He names a vicar-general for Abyssinia, with the title of Abuna.

c. The *Armenian* Church, to which almost all the Armenians belong, acknowledges few holidays, and condemns the worship of images. It is superintended by four patriarchs, of whom the principal, and bearing the title of *Catholicos of all the Armenians*, resided at the convent of Etshmiadsin in Persian Armenia till 1822, when he took refuge within the Russian territory; although it is probable that

he has returned to his ancient residence since that province became incorporated with Russia. Of the other three, one resides at Sis in Caramania, another at Gandsasar, near the Lake of Erivan, and the third at Agathamar, a convent in an island of Lake Van. The members of the Armenian Church form a considerable part of the population of Armenia, and they are spread over several other countries. Some Armenians have united with the Roman Church, and have an archbishop at Nashtshivan on the Don, and another in the Isle of Saint Lazaro in the lagunes of Venice. There are also several thousands of them in the Ottoman empire, particularly at Constantinople, under the superintendence of an independent patriarch.

4. The *Maronite* Church, whose members are called Maronites, after John Maron, a priest of the fifth century, live in Lebanon and Cyprus. They admit the first four general councils, and consequently recognise in Christ one person and two natures; but they are Monothelites, in admitting in his two natures only one will. The greater part of them have united with the Roman Church, preserving, nevertheless, most of their own rites. Their spiritual head, who acknowledges the Pope's supremacy, bears the title of Patriarch of Antioch. He resides at Cannobin, a convent in Lebanon.

Several chronological eras are recognised by the different branches of the Greek Church. The most generally adopted is that of Constantinople, which dates the creation 5508 years B.C. The Copts place the same event in the 5493 year before our era, or, according to their reckoning, 5000 years before the birth of Christ. The Coptic Church also employs the Era of Dioclesian or Era of Martyrs, which began on the day when Dioclesian, according to general belief, was proclaimed emperor at Chalcedon, 29th August A.D. 284, although in reality that event took place some months later. The Armenians date their era from the 9th July A.D. 552. The Greek civil year begins the first of September, and the ecclesiastical towards the end of March. The Armenian ecclesiastical year begins on the 11th of August.

B. Christians, who, in matters of faith, acknowledge no other authority than the Bible, may be divided into *Unitarians* and *Trinitarians*.

I. All Christians who deny the three persons in one godhead, may be called *Unitarians*, or *Anti-Trinitarians;* and under this name may be classed the *Arians*, the *Unitarians*, properly so called, and the *Socinians.** The origin and distinctive tenets of these different sects belong more to the province of the theologian than that of the geographer, and it may be sufficient here to remark, that Unitarians are found in every country. The Socinians are not very numerous. The greatest number of them dwell in Transylvania, where they enjoy full liberty of conscience, and the free exercise of their public worship. They are found also in the Prussian states, in Holland, Britain, and the United States of America.

II. *Trinitarian* Christians form the greater bulk of the body called *Protestants*, a name originating at the period of a diet of the German empire, held in 1530, at which the princes and states attached to the opinions of the reformers of the then existing church, *protested* against any law that should prohibit innovations in religion. Protestants receive the Bible as a divine work, rejecting, however, as apocryphal, several books which the Council of Trent declared to be canonical; they recommend the reading and the study of the holy scriptures, of which they have made many translations into their vernacular languages, regarding however none of these as authentic, but referring always to the original text as the sole authority. It is a tenet of Protestantism that God has given to mankind, besides revelation, two grand lights, namely, *reason* to understand the word, and *conscience* to be the guide of conduct. Protestants reject every human authority in matters of faith, even that of councils. They receive nevertheless, not as a law, but as conformable to the Bible, the canons of the first four general councils, and the formula which announces the procession of the Holy Ghost, and of the Son: consequently their creed is so far conformable with that of the Roman Catholics. They admit only two sacraments; baptism and the Lord's supper. They communicate in both kinds, reject transubstantiation and the sacrifice of the mass; deny the lawfulness of monastic vows, the holiness of celibacy, the indissolubility of marriage, the merit of good works, and the virtue of indulgences. They reprobate the invocation of saints, the worship of images, auricular confession, the difference between venial and mortal sins, the remission of sins by human authority, extreme unction, purgatory, and the spiritual authority of the Pope and the Church. Their ministers are not priests; and ordination (except among Episcopalians,) is only a religious ceremony by which candidates are acknowledged and received by their brethren into the clerical body, and which conveys no spiritual authority. Confirmation, confession, and the nuptial benedictions, they regard only as religious ceremonies of human institution, which may be dispensed with. They have entirely suppressed extreme unction. The grand division of Protestants is into *Lutherans, Calvinists,* and *Arminians;* but of each of these there are many varieties. There are also numerous sects that cannot be classed under any of these great divisions; but as, in short, the divisions of religious opinion among Protestants upon minor points, are extremely multifarious, it would be vain to attempt to particularize them in a limited compass. We shall therefore notice only a few of the more considerable and important of their churches and sects, using the latter word in no disrespectful sense, but as applied to every religious party whose tenets are not anywhere embraced and patronized by the State.

1. *Lutherans* derive their name from Martin Luther, who began the reformation in 1517. They however denominate themselves *Evangelicals,* or *Adherents of the Confession of Augsburg*, which is their official name in Germany and France. This latter name they derive from the famous Confession, written by Melancthon and presented to the Emperor Charles V. at the diet of Augsburg in 1530, by the princes and states who had embraced the opinions of Luther. The Lutherans are distinguished from other protestants by the mystical manner in which they express themselves with regard to the real presence in the Eucharist. Rejecting transubstantiation, they nevertheless admit the real presence, and say that believers eat the true body, and drink the true blood of Christ, in eating the bread and drinking the wine, *in, cum, et sub pane et vino;* so that the bread and wine although consecrated preserve their own nature so long as they remain undistributed to believers, and are not to be adored in any case. They use unleavened bread in their communion like the Romanists. They do not absolutely condemn a hierarchy, but at the same time do not admit its divine institution; and their prelates are subject to the sovereign prince, who is always invested with the spiritual supremacy. In Sweden, the Lutherans have archbishops and bishops, who form one of the four orders of the legislature. In Denmark, Norway, and Iceland, these dignitaries have no prerogative that gives them political influence. Lutheranism prevails in Prussia, Sweden, Denmark, Norway, Hanover, Saxony, Wurtemburg, and other German states; in the Baltic provinces of Russia; and it reckons many members in Hungary and other provinces of Austria; in the United States of North America, and in the Swedish and Danish colonies.

2. *Calvinists* are named from *Joannes Calvinus*, or *Jean Cauvin*, a Frenchman of Noyon, who first taught his opinions at Geneva and in France. They were formerly called *Hugonots* in France,

* The *Arians* derive their name from Arius, a presbyter of Alexandria, who, about the year A.D. 319, promulgated the opinions held by him respecting the nature of the Godhead, which, six years afterwards, were solemnly condemned by the celebrated council held at Nice, (Nicea) in Bithynia. The founders of the *Socinians* were Lellio Sozzini, or Socinus, a Siennese nobleman, and his nephew Faustus Socinus, the latter of whom died in Poland in 1604.

but now take the name of the *Reformed Church*. They wholly reject the doctrine of the real presence; but their distinguishing theological tenets respect the doctrines of original sin, particular redemption, effectual, or as some have called it, irresistible *grace* in regeneration, and the *perseverance* of the saints. These among theologians are termed *the five points*, and frequent have been the controversies agitated respecting them. They exhibit great simplicity in their forms of worship, and reject the use of crucifixes, images, and tapers, which the Lutherans admit as ornaments. The government of the Calvinistic churches is strictly republican. England, Scotland, Holland, the Swiss cantons of Berne, Zurich, Basel, and Geneva; the duchy of Nassau, the principalities of Anhalt, Lippe, and Electoral Hessé, in Germany; the departments of the Gard, Ardeche, Drome, Lot-and-Garrone, and others in France; Hungary, Transylvania, and the military borders of Austria; the United States of North America, and the British and Dutch Colonies in America, Africa, and Asia, are the countries where Calvinism is most prevalent. Calvinists are also numerous in Prussia; and in the United States of North America, they form almost a fourth part of the population. In Scotland and England the Calvinists are divided into two classes, *Presbyterians* and *Congregationalists:* the former of whom are governed in spiritual matters by provincial or general councils, called Presbyteries, Synods, and General Assemblies; among the latter, each congregation exercises supreme ecclesiastical power over its own members. Both classes formerly were named, in England, *Non-conformists*, in respect of their not conforming to the Established Church. In Scotland, the Established Church is Presbyterian in government and Calvinistic in doctrine; the great body of dissenters are also Calvinists, and many of them only seceders from the church in respect to its discipline. The *Puritans*, were those who in 1565 rejected the English liturgy, in order to establish what they deemed a purer form of worship.

Since the middle of the eighteenth century, the Lutherans have made an approach to the doctrine held by the Calvinists respecting the real presence in the Lord's supper; and the latter, in Germany and France, having abandoned some of the rigorous points in the Calvinistic doctrine of predestination, there is now scarcely any difference between them, and they make no scruple to attend each others churches. They even join in the communion of the Lord's supper when celebrated by the ministers of either body, because, in the conducting of this solemnity, both alike make use of the very words of the institution without comment. The only thing that for some time prevented their union into one church, was the diversity of their church government, which is republican in the one case and monarchical in the other. In 1817, however, in the Duchy of Nassau, the two churches were united, under the name of the *Evangelical church*. Similar unions have since taken place in Paris, Frankfort-on-the-Main, Prussia, Bavaria, Baden, Electoral Hesse, Grand-ducal Hesse, Anhalt-Bernbourg, Waldeck, and other parts of Germany.

3. The name of *Episcopalians* is given to a numerous body of Protestants, who, in addition to the leading doctrines of protestantism, maintain the divine institution of episcopacy, and the unbroken transmission of the apostolic ordination of the clergy. At the head of the Protestant Episcopal churches may be placed the *Anglican*, or *Church of England*, which is the established church both in England and Ireland, although in the latter country its communion is adhered to only by a small minority of the population. The doctrines held by the Anglican church are contained in thirty-nine articles of religion, respecting some of which many disputes have arisen as to whether they are most Calvinistic or Arminian in their bearing. In its form of worship, this church has preserved so much of the Romish liturgy, priestly costume, and ceremonies, as is consistent with the Scriptures. It has also retained a hierarchy, only substituting the King as the spiritual head of the church instead of the Bishop of Rome. Its archbishops and bishops are lords of parliament, and are in reality appointed to their high station by the King, although a form of election is nominally vested in the Dean and Chapter of the different Sees. Of late years English colonial bishops have been appointed for Jamaica and Barbadoes, in the West Indies; Calcutta, Madras, and Bombay in India; Montreal, Nova Scotia, Quebec, Toronto, and Newfoundland, in British North America; and one also for Australia

Episcopalians are somewhat numerous in Scotland, particularly in the northern counties. The Scottish Episcopalians are, however, completely independent of the English church. There are also many Episcopalians in the United States of North America, some of whom have reduced the thirty-nine articles to ten, and abolished the use of the Athanasian Creed. The Moravians are Episcopalians.

4. The *Congregationalists*, or *Independents*, regard each congregation as a distinct part of the whole visible church; in other words, as a church possessing the full powers of self-government, without subjection to any personal head or ecclesiastical body. Their doctrines are almost identical with those held by the Church of Scotland, only they reject written confessions of faith as unscriptural; their churches are numerous both in Britain and North America, particularly in New Hampshire, Vermont, Massachusets, and Connecticut.

5. The *Arminians*, or *Remonstrants*, are so called from James Harmsen, or Arminius, a Dutch minister, and from a remonstrance which his followers presented to the States of Holland in 1609. Arminius, in combating the doctrine of predestination and other Calvinistic tenets, found many partizans, and his opinions are now very prevalent among Protestants, but his followers nowhere form separate churches. They are most numerous in Holland and England.

6. The *Baptists*, although sprung from the *Mennonites* or *Anabaptists* (i. e. Re-haptisers), a sect at first disgraced by the fanatical and lawless excesses of its adherents, are remarkable for peaceable manners, industrious habits, personal probity, and zeal in propagating the gospel. They acknowledge no person or ecclesiastical body as judge in matters of religion; have no confession of faith, and in respect to the Bible, they leave every one at full liberty to exercise the right of private interpretation. They differ among one another on many points, such as the lawfulness of infant baptism, which is denied by the *Anti-Pœdo-Baptists*, but all agree in administering baptism to adults as an indispensible rite, and in reprobating unnecessary oaths, as well as profane swearing, and the use of arms. They are most numerous in the United States of North America, where they are supposed to form a sixth part of the population. The states where they are chiefly found are Maine, Rhode-Island, Virginia, North and South Carolina, Georgia, Alabama, Mississippi, Tennesee, Kentucky, Indiana, and Illinois. There are also many of them in Britain and Holland; in the southern provinces of the Russian empire, and in the Prussian governments of Dantzic and Marienwerder. Their missionaries, both British and American, are extensively scattered over many regions of the globe, particularly the East and West Indies, and the Islands of the Pacific.

7. The *Quakers*, a body of benevolent enthusiasts, calling themselves the *Society of Friends*, were founded about the middle of the seventeenth century by George Fox, a native of Drayton in Leicestershire. They believe in the Trinity, the fall of Adam, the promise of a Redeemer, and salvation by Christ; but reject the Calvinistic doctrines of election and reprobation, and admit neither types nor rites, not even the sacraments of baptism and the Lord's supper. Four maxims form the basis of quakerism. 1. The civil power cannot exercise any authority in matters of religious belief; 2. Oaths required by civil authority are unlawful; 3. War is unlawful; consequently violence is not to be met by resistance, nor is self-defence to go the length of shedding blood, or endangering the life of an enemy; 4. A set ministry is unlawful; so likewise is the payment of tithes, and rates for the support of an established church and clergy, although no resistance is to be made to the levying of these when effected by legal process. The Quakers are plain and unvarying in their dress; and their houses, while furnished with all that comfort and usefulness require, exhibit nothing gaudy or superfluous. They disapprove of theatrical amusements, games of chance, cards, lotteries, idle discourse, useless

reading, singing, and hunting; and banish from their conversation the words *hazard*, *chance*, *destiny*, and *fortune*, as an insult to Providence. In addressing themselves to others, they will not say "you" to an individual, but, as the French express it, they "thee" and "thou" every body (ils tutoient tout le monde.) They are remarkably industrious in business generally, although their pursuits are more directed to trade and commerce than to manufactures or agriculture; and many of them are wealthy. They are found principally in England and the United states of North America, and are most numerous in Pennsylvania, which was originally colonized by Quakers carried thither by the celebrated William Penn.

8. The *Moravian Brethren*, or *Hernhutters*, derive the former of these names from the *Bohemian and Moravian Brethren*,* in whom the sect originated; and the second from the establishment which was founded in 1721 at Herrnhuth, near Zittau in Upper Lusatia, upon the domain and under the protection of Count Zinzendorf, who then gave a new form to the system first adopted by the brethren, and ultimately became their bishop or chief. The Moravians believe in the possibility of attaining perfection on earth, by an inward light and a more intimate communion with God. In their liturgy and discourses they make use of mystical terms, and affect a kind of religious sentimentalism. They admit the original corruption of mankind by the fall of Adam, the eternity of punishment, and the necessity of justification by the expiatory sacrifice of Christ, whose divine nature they fully recognise. The rule of their elders, or ecclesiastical chiefs, extends over a great many acts of civil life, such as marriage and the acquisition of property, neither of which can be concluded without their consent. All litigation is forbidden to them, and they form a sort of republic, in which individual interests are always subordinate to the general welfare. They pay particular attention to the moral and physical education of children. It is an established maxim of the community never to take any share in religious controversies; hence they have a wide field for the making of proselytes, which is farther extended by the establishment or recognition of three divisions or classes of their body, corresponding to the distinctive differences of the Moravian, the Lutheran, and the Reformed churches. They are arduous in the prosecution of missionary labours, and have been instrumental in carrying the blessings of religion and of the useful arts to the remotest and most savage tribes. It is estimated that the Brethren's church forms a community of about 139,000 individuals. They have establishments at Neuwied, Barby, New Dittendorf, &c. in Germany; at Christiansfeld in Denmark; at Neuchatel, Basle, and elsewhere in Switzerland; at Ziest, &c. in Holland; at Fulneck, in the township of Pudsey in Yorkshire, Tytherton in Wiltshire, and other places in England; at Ayr in Scotland; at Gracehill, near Ballymena, in Ireland; at Strasbourg, &c. in France; at Sarepta in Russia; Tranquebar in India; in Guinea; Danish Africa; at the Cape among the Hottentots; at St. Thomas, St. Croix, and St. John, in the Danish West Indies; in Jamaica; at Nain in Labrador; at New Herrnhuth, Lichtenfels, &c. in Greenland; at Bethlehem and Nazareth in Northampton county, State of Pennsylvania, and at other places in the United States of North America. Bethelsdorf, near Herrnhuth, a little town in Prussian Saxony, is the seat of their directoral college, which is composed of twelve members chosen by the Synod.

9. The *Swedenborgians*, or members of the *New Jerusalem Church*, derive the first of these names from Emanuel Swedenborg, a Swedish nobleman, who died in London in 1772, and who was known in the scientific world as a member of the Academy of Sciences of Stockholm, and as a distinguished mineralogist. Swedenborg, in liveliness of fancy, has perhaps never been exceeded by any other mystick. He not only alleged that he held frequent communications with spiritual beings, and was the recipient of innumerable revelations regarding the worship of the Deity, the meaning of the Scriptures, and the state of man after death; but in his writings, which are voluminous, he gives what may be termed statistical details of heaven, hell, and the planetary worlds, and minutely describes the manners of their inhabitants. The sentiments held by the Swedenborgians seem to tend to the recognition of a scheme of universal pardon. Otherwise, they believe in the Holy Scriptures; acknowledge the divinity of Christ, in whose single person alone, and not in the Godhead, they invest the Trinity; and they insist on the necessity and efficacy of a life of charity as conducive to regeneration and ultimate salvation. Although Swedenborgism had Sweden for its birth place, it can boast of but few adherents in that country, and these are chiefly confined to Gothland. Some individuals belonging to the sect are found also in Holland, and in Appenzell and St. Gall in Switzerland. England, however, is the country in which they appear to be most numerous, especially in London, Bristol, Birmingham, Derby, Hull, Boston, and Manchester, the last of which places seems to be the chief seat of their community. Some congregations are found in Scotland, but these are confined to the metropolis and one or two of the large towns. They have places of worship, or as they call them, *temples*, in Philadelphia, Baltimore, New York, &c. in the United States, and preaching stations in the East Indies and Southern Africa. They indulge in the singular belief that the New Jerusalem Church exists in a perfectly organized state in the interior of Africa.† The celebrated travellers, Sparmann and Nordenskiold, were Swedenborgians; so also was Charles XIII. before he ascended the Swedish throne.

10. *Methodism* originated about the year 1730, with some students at the University of Oxford, to whom the name *Methodists* was at first applied derisively, on account of the extreme regularity and strictness which they affected in their manners and in the performance of their devotional exercises. Their leaders were John Wesley and James Morgan, the former of whom, along with George Whitefield, a most eloquent and persuasive preacher, laboured for a number of years in different parts of the United Kingdom and America to disseminate the principles of Methodism. In 1741, a difference of opinion on some points of belief led to a separation between Wesley and Whitefield, and since that time the Methodists have been divided into two branches, namely the adherents of Whitefield, or Calvinistic Methodists, by whom the doctrine of predestination is admitted in its most rigorous sense, and the Wesleyans, who are Arminians, and who form by far the most numerous portion of the body. The Methodists are great promoters of Sunday schools, and their zeal and example has contributed much towards reformation of manners wherever they have established themselves. In the field of missionary labour, they enter into honourable rivalry with the Baptists and Moravians. At first they remained in communion with the Church of England, but latterly they have made a complete separation, and are under the general government of an assembly of their clergy, called the *Conference*, in which the whole of their ecclesiastical property, which is of considerable value, is vested. They have made rapid progress in Britain and the United States of North America. They have also establishments in India, particularly at Calcutta, and in Ceylon, and in Polynesia.

The RELIGION OF ISLAM, or MAHOMETANISM, is essentially a pure theism, and its creed is summed up in this simple formula— *There is no god but Allah, and Mohammed is his prophet*. It was founded by Mohammed of Mecca, about the year 611 of the Christian era; and while its adherents acknowledge

* A number of the followers of Huss, in Moravia, who in the year 1457, retired to the Lordship of Lititz, and assumed the appellation of *Brethren of the Law of Christ* (Fratres Legis Christi.) Soon dropping part of this name, they styled themselves simply *The Brethren*; and being afterwards joined by many in Bohemia who were of like disposition, they called themselves *The Unity of the Brethren*, or *United Brethren* (Unitas Fratrum.) Their main rule of conduct, which is still adopted by the modern sect, was to suffer all for conscience sake, and not to use arms in defence of religion, but to seek protection from the violence of enemies, by prayer to God, and by dispassionate remonstrance. — *Klinesmith, Hist. Rec. of the Moravian Church.*

† Balbi, *Abrégé de Géog.* p. 70.

the divine authority of Judaism and Christianity, they believe that Mohammed was the last and greatest of the prophets, and that his doctrine has accordingly superseded that of his predecessors. *Islam* is the name of the religion itself, and signifies submission to God. Its professors are called Moslem, Moslemaun, Mossolman, or Mussoulmaun, (*i. e.* true believers); but among Europeans they are generally called Mahometans, from the name of their prophet, which is thus variously expressed in Roman characters: Mohammed, Muhammed, Mahomet, Mahmoud, Mechemet, Mehmet. The principal precepts of Islam are,—1st, Purification; 2d, Prayer; 3d, Fasting in the month *Ramazan*, during which every kind of food must be abstained from between sunrise and sunset, an abstinence which is amply compensated by the licence given to the faithful during the succeeding festival of *Bairam*; 4th, Almsgiving, the legal amount of which, as distinguished from casual charity, consists in giving every year to the poor the fourth part of all moveable property; 5th, Pilgrimage to Mecca, which every true Mussulman, in good health, is obliged to undertake at least once in his life. Prayer five times a-day at set hours is enjoined, but the ceremony may be performed at home, or wherever else the individual may happen to be. It is only the solemn prayer on Friday that must be made at the mosque and along with the congregation. Friday is the holy day of the Mahometans, and is called *gemaat* (assembly). On this day all believers must repair to the mosque at the hour of prayer, but during the rest of the day they are at liberty to work, and manage their affairs. They have only two festivals that require absolute rest, one of which is the feast that succeeds the fast of Ramazan. Following the example of Ismael and the ancient Arabs, the Mahometans practise circumcision, and they have also adopted the Mosaic distinction of clean and unclean animals. They believe in good and bad angels, and that while evil spirits pursue men incessantly to draw them into evil, good angels are charged by God to support and guide them in this life of trial. They believe also in the immortality of the soul, or rather, to speak correctly, in a future life, the nature of which, however, is perfectly inconsistent with the metaphysical notion of the soul's immateriality and capability of separate existence. They believe also in a universal judgment, where every one will be rewarded according to his works. Mahometanism forbids the use of wine and intoxicating liquors. It permits believers, however, to marry four wives, and moreover leaves their female slaves at their disposal. In this world they are devoted to the gratification of their animal propensities, and in the world to come they expect to lead a life of voluptuous enjoyment in heaven, amidst cool groves, upon the banks of clear streams, or beside sparkling fountains, in the company of the Houris, who, always young and ever-blooming, will be constantly ministering to the pleasures of the blessed. In other respects, Islam leaves its votaries at perfect liberty, and the Mussulmen are persuaded that whatever befals them, good or evil, is predestinated. All their doctrines and precepts are contained in the Koran (*i. e.* the reading or lesson), the different parts of which were, as Mahomet pretended, successively revealed to him by the angel Gabriel, and which contains in one body their religious, civil, and military code of law. It is written in Arabic, which on that account has become the sacred language of the Turks, the Persians, and other Mussulman nations. These nations also agree, in adopting as their common *era* the flight of Mahomet from Mecca, which they call *Hegira*, or *Hejirah* (hedge-rah, *i. e.* the flight.) Their years are lunar, and the first of them commences with the 16th of July A. D. 622.* In the early periods of Mahometanism, those princes who succeeded its founder as the chiefs of his new religion, were called *khalifs* or *vicars* of the Prophet, and also *emir-el-moumanin*, commander of the faithful. But as, in the course of time, several claimants of the khalifat appeared at once, the influence attached to title and office diminished, and there is at present no khalif, properly so called. The Sultan of Constantinople is only invested with temporal authority, and it is the *mufti*, in concert with the *ulema* or doctors, who judges of questions of doctrine. The King of Persia stands in the same situation; he is not even invested with the full sovereignty (theoretically at least), since he exercises only a temporary authority until the reappearance of the mahdi, to which we shall afterwards advert. The Emperor of Morocco is the only prince who pretends to unite in his own person the spiritual and the temporal characters; he sometimes takes the title of khalif, but his political influence is inconsiderable. The Mussulmans have ministers of religion of different classes. The *khatib* or preacher, ascends the pulpit every Friday in presence of the assembled people, and prays for the sovereign and the nation. The *imam* is the ordinary officiating minister in the mosque; he leads the prayer of the people, who follow his movements; he also presides at circumcisions and funerals, and is, in short, the counterpart of the curate or parish priest of Christendom. These ministers are not subject to vows; they are free to marry or to change their profession; and the same individual is by turns a priest, a soldier, a lawyer, &c. The learned in the Koran are styled *mollahs*, and correspond in status with our doctors in divinity; although in some Mahometan countries the title seems to be applied indiscriminately to all ministers of religion. Mahometan countries are infested with a species of monks or friars, persons professing to lead pious and retired lives, and who bear the appellations of *fakirs* and *dervishes*, names derived from Arabic words signifying a state of poverty. Of these there are several different orders, the origin of some of which goes back to the times of the first khalifs. Most of these friars are subjected to a severe noviciate, and are admitted only after a long probation. Some of them live in communities in a sort of convents, others lead a solitary though wandering life. All of them, however, are free to change their condition, and choose whatever profession suits them. Those who pique themselves upon a purely contemplative life are called *safis*, some of whom carry their notions to the most extravagant spirituality, and have consigned their reveries to numerous books. Those, on the contrary, who love the world, often lead a very irregular life, and give themselves up to every excess. It is those persons that are mentioned by travellers under the names of *calenders*, *santons*, &c.

The adherents of Islam have always been divided into a great number of sects, and their schisms have sometimes occasioned destructive wars. In order to give an idea of the little union that prevails among Mahometans, it may be sufficient to repeat a statement made by some Mussulman doctors, that the Magian religion is divided into 70 sects, Judaism into 71, Christianity into 72, and Islam into 73, only one of the latter of which can lead to salvation. These divisions began immediately after the death of Mahomet, who left no son, and having neglected to nominate his son-in-law Ali to be his successor as the head of the new religion, his companions in arms successively elected Abubekr, Omar, and Osman to the khalifate. These proceedings were immediately protested against by some of the other adherents of the Prophet, who refused to acknowledge any but Ali for their lawful sovereign. Afterwards, when Ali was raised to the khalifat, several of the opposite party in turn revolted from his authority, and commenced a bloody civil war. Such was the origin of the two principal sects that still divide the Mahometan world; namely, the *Sonnites* and the *Sheahs*. Besides these there are two modern sects, called the *Yezedees* and the *Wahabees*, which, on account of the place which they occupy in the recent history of the East, must not remain unnoticed.

1. The *Sonnites*, or *Soonees*, admit the legitimacy of the regular succession of the khalifs Abubekr, Omar, Othman, Ali, &c. and regard as equally holy all the companions of the Prophet who were faithful to the precepts of Islam; while the *Sheahs*, on the contrary, recognise only Ali and his descendants as the lawful heads of the religion, and anathematize Abubekr, Omar, and Othman, and all who did not take part with their favourite khalif. The two sects regard each other as little better than infidels,

* A table, showing the correspondence of the years of the Christian and Mussulman eras, will be found in the first volume of the History of Spain, in Lardner's Cabinet Cyclopædia.

and hold no communion. This division, which was at first only political, soon began to have an influence in religious matters. Islam being developed by time only, recourse was necessarily had to the decisions of the companions of the Prophet respecting matters not explicitly stated in the Koran. The three first khalifs naturally exercised a great influence, and the Soonecs admit indifferently the theologic explications and legal decisions of these personages; on this account they are called Soonites, from the Arabic word *sonna* (tradition). The Sonnite faith at present prevails among the Mahometans of the Ottoman empire, Arabia, Egypt and other parts of Arabia, in Turkestan, India, and the eastern islands, and also among the Turkish tribes within the Russian empire and Persia. They are subdivided into four sects, called *Hanbalites*, *Shafeites*, *Malekites*, and *Hanefites*, from the names of their respective founders, Hanbal, Shafei, Malek, and Abu-Hanefa. But, as they differ only in unimportant matters, they are all considered to be equally orthodox, and have their several places of worship within the Beitullah (House of God) at Mecca. The doctrine of Abu-Hanefa is generally followed in Turkey, that of Shafei in Egypt, that of Malek in Barbary, and that of Hanbal in Arabia.

2. The *Sheahs*, rejecting as heretical the traditional commentaries admitted by the Sonnites, adopt different principles, and are on this account named by their adversaries Sheahs, from an Arabic word signifying sectaries. They call themselves *Adelies*, or partizans of justice. As in the case of the Sonnite sect, there are likewise differences of opinion on some important points among the Sheahs. Most of them agree in recognising Hassan and Hossein, the sons of Ali, as lawful sovereigns; and they regard in the same light the direct descendants of Hossein to the last individual of the race, who, having disappeared at the age of twelve years, is believed to be concealed in some remote place, from which he will reappear among men, and make the right cause triumphant. These descendants of Hossein are named the *twelve imams*, the last of them is also named *mahdi*, or the directed. During the period of his disappearance there is no lawful authority upon earth, and kings are to be considered his lieutenants only. It was in consequence of this belief that the Persian kings of the Sofi dynasty, who pretended to be descended collaterally from the imams, called themselves the slaves of the king of the country, and kept several horses ready saddled for the use of the imam when he should reappear. This singular doctrine still prevails in Persia. At the outset, however, there were many Sheahs who did not admit this succession of the imams, but believed that to Ali alone, after Mahomet, belonged the temporal and spiritual authority, and that if he yielded for a time to the perversity of the age, he would not delay to come again upon earth with majesty, and punish the perpetrators of the crimes that so long had stained human nature. Many of these sectaries even believe that Ali has been invested with a divine character, and they do not scruple to adore him as a god. Such is the case with the *Nessares* and *Mutwalees*, who dwell among the hills and valleys of Lebanon. Other Sheahs acknowledge the first six imams, but say that there was an error respecting the seventh, and that, in place of Mousa, one of his brothers, called Ismael, should have been chosen. Hence they were named *Ismaelians*. They believe that after Ismael the character of *mahdi* passed to unknown personages; and they successively attributed the character to the Fatimite khalifs of the race of Ismael, who, during the tenth, eleventh, and twelfth centuries, ruled over Egypt, Syria, and parts of Africa. The Ismaelians established in Persia, not far from Casbin, belonged to this sect, and likewise those inhabitants of Lebanon who became so famous in the middle ages by the name of *Assassins*. These two branches still subsist, but not with the same power and resources. To the same sect may be referred the *Druzes*, whose origin goes back at least to the eleventh century, in the reign of the Fatimite khalif Hakem. They differ from the other Ismaelians, in believing that Hakem was the last incarnation of Deity, and, expecting his return into the world, they worship him under the figure of a calf! The doctrines, however, of the various sects of Sheahs have changed from time to time, and it would be a tedious and useless labour to describe them all.

3. The *Yezedees* dwell in the mountains near Sinjar in Mesopotamia, and appear to be the remains of the Magians, Manicheans, and Sabeans, who long troubled the East. They became afterwards blended with the members of the Christian and Mussulman communions, so that it is now difficult to discover their true origin and character. They admit a good and an evil principle; and as they believe the evil one alone is to be feared, it is its representative only that they seek to propitiate. They name him *al-sheikh almoazzem*, or the great sheikh. They would rather be put to death than curse him; moreover they worship the sun at his rising. They hold Christian priests in great veneration.

4. The *Wahabees* originated about the middle of last century, from the preaching of Abd-ul-Wahab. Their doctrine is Islam reduced to its greatest simplicity. According to their opinion, the Koran contains a doctrine truly divine, but they hold that as Mahomet was only an ordinary man, his name ought to have no place in formulas of religious worship, and that every honour paid to him or any of his disciples is to be considered an act of idolatry deserving of punishment. They worship God alone, are scrupulous of invoking any mortal being; and when they meet with chapels or mausoleums raised in honour of imams or saints (structures which are very numerous in Moslem countries), they pull them down. They avowed their intention of expelling the Turks and all other foreigners from Arabia, and had nearly succeeded in getting possession of the whole country; but after a fierce warfare were at last reduced by the present Pasha of Egypt, and their chief Abdallah carried prisoner to Constantinople, where he was put to death.

BRAHMINISM recognises a supreme being, called *Para-brahma*, for its chief god; but its votaries are taught that he delegates his powers to Brama, Vishnu, Siva, and a multitude (333,000,000) of subaltern divinities, who are thus set over the government of the world. Brahma presides over the earth, Vishnu over the water, and Siva over fire. These three persons form one godhead, and are called the *Trimourti*, or Hindoo Trinity. The Hindoos have several sacred books, named *Vedas*, which are written in Sanscrit, and form their code of religion and philosophy. They believe in the metempsychosis, or transmigration of souls, and, in accordance with this belief, some castes abstain from the use of animal food. Although Brahmanism is debasing in its general tendency, yet it inculcates the duty of moderating the passions, teaches the doctrine of the immortality of the soul, and its purification by penance and voluntary abstinence, and enjoins many things of a practically religious nature. At one time all its professors appear to have been divided into four great *castes* or classes, namely, the *Brahmins* or priests, the *Kshetrys* or soldiers, the *Vaisya*, or merchants and agriculturists, and the *Sudras* or artizans, labourers; but even in the time of their legislator Menu (perhaps 3000 years ago), these classes had become mixed. The military caste has long since totally disappeared from history; and of the remaining three the Brahmins alone have any pretensions to a pure descent from their original priestly stock; but as they can produce no written records of their descent, even their pretensions are not universally admitted. The Brahminical worship is embodied in a great number of solemn ceremonies and customs, some of them of a most horrible description, such as the procession of Juggernath, in which a heavy car, bearing the idol, has crushed innumerable fanatics, who threw themselves before the wheels, expecting to find at once a glorious death and everlasting happiness. Need we add those remains of the practice of human sacrifices exemplified in the custom of self-immolation, once so prevalent among widows belonging to the two higher castes of Hindoos; or those most extraordinary sacrifices of their own lives, which the Brahmins have been known to make in times of epidemics or other public calamity. There are besides other festivals, where tumult, licentiousness, and indecency prevail, and where immodest symbols are presented to the prostrate multitude. Ablutions and prostrations form an important part of their religious rites; and even the images of their gods are solemnly bathed in the sacred rivers and tanks. Seve-

ral rivers, such as the Ganges, the Nerbuddah, and the Krishna, are reputed sacred. The Hindoos make numerous long and fatiguing pilgrimages. They are, in short, most rigid observers of all the external forms of religion, but are utter strangers to the charity, and purity of life and conversation, that alone make religion valuable. Indeed, of all systems of religion, so called, there is hardly one that exceeds Brahminism in demoralizing its votaries.

The Hindoos, in their chronology, make use of several eras, of which we shall state the names and commencing dates:—The *Caliyug*, the most ancient of India, began 3101 before Christ: the *Era of Salivahana*, 77 years after the Christian era; the *Era of Vicramaditya* 57 years before Christ; and the *Era of Parasurama*, 1176 years before Christ. The first of these is the most generally known; the use of the second prevails in the southern and western provinces, that of Vicramaditya in the north, and the Parasurama era in Malayala in the south of India.*

BUDDHISM appears to have originated in India about 800 or 1000 years before Christ. It rejects the division of castes; and its principal doctrines, which have transformed the savage nomades of Asia into civilized people, and have made their mild influence felt even as far as Siberia, are the same wherever the worship is followed. The Buddhist hierarchy alone varies in different countries; but this difference is not enough to induce us to consider Buddhism in any other light than as a single religion without any real divisions. The Buddhists, like the Brahmins, believe in a perpetual series of creations and destructions of the world. They do not admit the existence of the Supreme Being, but substitute in his place a luminous space which contains in itself the germs of future beings; and also allege, that even this luminous space is not the highest in the world; and that higher still there is a third region, eternal and indestructible, the residence of the primitive cause of the destruction of all perishable things. Existence is regarded by the Buddhists as a real evil, everything that exists being unreal, and only the product of an illusion that deceives the senses. While all the intellectual parts dispersed in matter, from the highest region of light even unto hell, are freeing themselves from what they have contracted of a material nature, purifying themselves, making themselves perfect, and finishing by union, the indestructible universal spirit who is to preserve all things during an incalculable period, remains in repose until the laws of *damata*, or destiny, require a new creative power, from the operation of which nevertheless are to be exempted those beings who, totally divesting themselves of matter, have become *Buddhas*, and remain plunged in *nirvana*, or eternal nothingness—a state opposite to that of existence in matter. The Buddhas dwell in the indestructible region beyond the luminous space; and for the purpose of preserving the remembrance of the true doctrine, and of rendering mankind capable of following it, these blessed beings descend from time to time upon the earth clothe themselves with bodies, and manifest themselves to men. Those of the highest rank, namely, the *Buddhas*, properly so called, appear but once; the others, named *Boddhisrata*, appear at different times in successive incarnations, until they reach the rank of the former, after which they appear no more in the world. These perfect beings exercise an absolute empire over their enemy matter, in all its seductive forms. As the masters of *maya*, or the illusion that beguiles the senses by its changes of forms, they can destroy it at will, or make use of it to work out the salvation of mankind. It is in this manner that all the incarnations of the Buddhas have been effected; their souls descend in the form of luminous rays, and take a body under the envelope of Maya. They do nothing without a special design; their operations are never violent; they never restrain the free will of inferior beings who are subject to matter, and for whose safety they have come from above. Up to the present age of the world, four Buddhas have appeared; the last of whom was *Shakyamouni* or *Gautama*; a fifth is to come before the next destruction of the world, the *Buddha-Maitri*, or *Maitari*. The Ceylonese and Transgangetic nations announce him for the year 4457 of the Christian era, an epoch that will finish the period of 5000 years which are to follow the death of Shakyamouni, according to the Singalese books. There exist very marked differences of belief relative to the person of the last Buddha, among the different sectaries of this widely spread religion.

The Buddhists regard the universe as inhabited by different classes of beings, namely, *shama*, or reproductions by birth; *roupa*, material, or visible gods; or, *aroupa*, immaterial, or invisible. These beings mount by progressive transmigrations from a lower to a higher degree of existence, according to their good or bad conduct in their preceding state, until at last they attain the blessed state of *nirvana*, that is to say, of an existence purified of everything material, and, consequently, insusceptible of the impressions of *maya*, or illusion. In the same way as all these beings are continually quitting one kind of existence for another, so do the worlds wherein they dwell experience changes. Gautama himself knows neither the beginning nor the end of this uninterrupted chain of mundane systems. All beings that dwell in *loka*, or the universe, produced by a succession of destructions and reproductions, are classified in the following manner: Men, and local gods called *nath*, who overlook and judge men, and who have for their servants good and evil genii. This first class has its residence upon the earth, and in the regions of the air that comprise *Mount Miennmo*, and the six heavens of the *Devas*, placed one above another, and increasing in the same order in brightness and splendour. The second class is that of *roupa*, or the visible gods, who occupy the sixteen higher heavens, as far as the twenty-third heaven of Brahma-laka. In the third class are found the immaterial beings, who, having been zealous followers of the doctrine of Buddha, occupy the four highest heavens, from the twenty-second to the twenty-sixth. Lastly, the Buddhas dwell in the *good*, or the empire that encompasses all the heavens.

Gandjour is the name of the Thibetan collection of the principal classical books of the ancient Buddhists of India, in which are comprised even grammatical and lexicographical works. It is composed of 108 volumes, and the Mongols and the Thibetans have built temples solely to contain these holy books. Some of the forms of worship practised by the votaries of Buddhism are apparently of a most puerile description. In order to make prayers addressed to the divinity effectual, many of the Buddhists deem it sufficient that they be put in motion by any means whatever (by the lips of man, or by a mechanical agent), and accordingly there is to be seen in their temples a great number of cylinders constantly turning, being moved by a water-wheel. On these cylinders are placed the holy books, whose contents thus agitated, are thought to have a happy influence upon the welfare of mankind. In their great solemnities they light up a stand of 108 lamps, representing the 108 volumes of the Gandjour, and which are wheeled round in the same way as the cylinders. The chaplets of the Buddhist priests are likewise composed of 108 grains.

Buddhism, though it originated in India, is not now generally received there. The few followers it still retains are called *Bhauddas*; for the creed of the *Jainas* of the Dekkan is a modified Buddhism. The other Hindoos regard Bhudda only as an incarnation of Vishnu. This religion still subsists in all its purity in Nepaul and Thibet. It also flourishes in Ceylon, from which country it was transmitted to India-beyond-the-Ganges. It is professed in the empires of Birmah and An-nam, and in China (where it is called the *Religion of Fo*), Corea, and Japan, by most of those who do not belong to the literary class. The *Samanian* hierarchy established in Thibet in the 13th century has spread its influence over the Mongol nations and some of the Tongouses; we must, however, beware of taking this hierarchy for a branch or modification of Buddhism. The person of the Dalai-lama is regarded as an incarnation of a Buddhist divinity, who has always had a predilection for the countries to the

* *Companion to the Almanac.* London, 1839.

north of India. The present series of the Dalai-lamas began only in the first half of the fifteenth century; they have now a regular hierarchy established in Thibet and Mongolia. Buddhism, in its institutions and external rites, exhibits a surprising likeness to the Romish Church. Among the Buddhists we find pontiffs, or popes, patriarchs with the spiritual government of provinces; a council of high-priests, who unite in conclave to choose the pontiffs, and whose insignia even resemble those of the Roman cardinals; convents of monks and nuns, prayers for the dead, auricular confession, the intercession of saints, fasts, kissing of the feet, litanies, processions, and holy water; all of which the Romanists allege have been borrowed from them, but which are as probably derived from the same common source, the ancient Magian religion of Persia.

The RELIGION OF CONFUCIUS is that professed by the literary class in China, of which Confucius was the patriarch and reformer. Its basis is a philosophic pantheism, admitting of being diversely interpreted according to the opinions prevalent at different epochs. It is thought, observes M. Abel-Remusat, that in a remote age the doctrine of the existence of an Almighty God, the rewarder of works, was not excluded from the Confucian system; and different passages in the writings of its author give room to believe that this great truth was admitted by him, but the negligence with which he has inculcated it upon his disciples, the vague meaning of his expressions, and the care he has taken to base his ideas of morality and justice exclusively upon the principle of love of order, and an ill-defined conformity with views of heaven and natural laws, have allowed his followers to deviate so far from true principles, that since the twelfth century of the Christian era, many of them have fallen into true spinozism, and taught, upon the alleged authority of their master, a complex system that partakes of materialism and degenerates into atheism. The worship, purely civil, rendered to heaven, to the genii of the earth, the stars, the hills, and the streams, as well as to the souls of parents, is, in the estimation of the Confucians, a social institution of little importance; or at least, they hold that its meaning may be explained in different ways. This religion has neither images nor priests; every magistrate performs its rites as part of his official duties, and the emperor himself, as the sovereign, is its patriarch, or pontiff. Generally speaking, all the individuals who compose the literary class in China, An-nam, and Japan profess it, but without renouncing the usages of other religions. They are more superstitious than religious; conviction has little to do with their conduct; and custom subjects them to observances and practices which are by themselves turned into ridicule; such as the distinction of lucky and unlucky days, horoscopes, metoposcopy, divination by lots, &c.

The WORSHIP OF SPIRITS, or the MYTHOLOGICAL NATURALISM of Eastern Asia, is considered by its followers to be the primitive religion of the most ancient inhabitants of China. It has spread as far as Japan, Corea, the country of the Tongouses, and Tonquin, where it has taken different forms, and is still professed by all that part of the population which has not embraced Buddhism nor the principles of Confucius. This religion has many doctrines in common with Buddhism; only the individual existence of genii and demons, independently of the parts of nature over which they preside, is better defined than in the Buddhist system; but it has degenerated into polytheism and idolatry through the ignorance of its professors. Its ministers are of both sexes, and devoted to celibacy; they practise magic, astrology, necromancy, and many other ridiculous superstitions. They are named *Tao-sse*, or *doctors of reason*, from their belief in the existence of *Primordial Reason*, by which the world was created. This doctrine, which was taught six centuries before the commencement of our era, by Lao-tseu, one of their masters, seems to correspond to the notions entertained by the Platonists respecting the *Logos*.

The RELIGION OF SINTO is the oldest that prevails in Japan. It bears a great resemblance to mythological naturalism, of which, by some it is considered only a branch. Sintism enjoins the worship of a supreme being; but it also recognises inferior gods, and it prescribes the practice of good actions and abstinence from animal food. Its temples are called *mia*, and each of them contains a mirror, to teach the worshippers, that as the stains of the body are faithfully depicted in this instrument, so the faults of the soul cannot remain hid from the deity. In some temples there is a niche containing the image of the subaltern god to whom the fabric is dedicated. The simplicity of this worship has been considerably deviated from since the introduction of Buddhism into Japan. It sanctions pilgrimages, devotion to a religious life, and confraternities of different kinds, including monastic institutions. Although Sintism is the most ancient religion of Japan, the *dairis*, or emperors of the country, who are regarded as of divine origin, have long followed the laws of Buddha.

MAGISM, or the RELIGION OF ZOROASTER, recognises the existence of a supreme being called *Zerwan*, or *boundless time*, from whom spring two principles; the one good, called in the ancient Persian tongue *Ehoro-Mezdao*, the *Oromazes* of the Greeks; the other evil, called *Enghreo-Meenioch*, the Greek *Arimanes*. These principles are at present engaged in continual conflict; but at the last Oromazes will gain a complete victory. Zoroaster taught that there were three worlds: an upper world, the dwelling place of primitive light, and productive force; a middle and visible world, in which Oromazes, the king of light, and *Mithra*, the union of the active and passive forces of nature, hold their reign; and a lower world of darkness, the dwelling-place of Arimanes and his mischievous crew the *Dews*. He acknowledged a hierarchy of heavenly beings, sprung from Oromazes; and these the Persians were wont to invoke as beneficent genii. Man, of heavenly origin, was at first of a luminous and pure nature; but, having fallen under the disastrous influence of Arimanes, he lost his prerogatives; but nevertheless, by fighting continually against the evil principle, he will come to have a part in the universal restoration of all things. The greatest part of the Magian worship consists in purifications, ablutions, and ceremonies which tend to bring its votaries nearer to that illumination of which they consider material fire to be the emblem; and on this latter account, these rites and ceremonies are practised, and the different forms of prayer prescribed in the ritual of Zoroaster are recited before the sacred flame burning continually on the magian altars. The doctrines of Zoroaster are contained in the *Zendavesta*, written in the ancient language called Zend. Magism still subsists among the Persians or Guebres in Kerman, Surat, and other parts of Guzerat, and in Bombay. In the first century of the Christian era, a religion, originating in Persia, spread over the Roman empire, under the name of the *Mithraic* religion. It bore a great resemblance to the religion of Zoroaster; but its adherents paid special adoration to the god Mithra, the son of Oromazes, to whom the guidance of the sun and the government of the world were consigned, and who was destined to act as the mediator between his father and mankind.

NANEKISM, or the RELIGION OF THE SIKHS, which originated with one Nanek, a native of the province of Lahore in India, born in 1419, may be considered as a mixture of Brahminism and Islam. Its precepts are those of the purest deism. The Sikhs worship one god, believe in future rewards and punishments, tolerate all religions, believe in a secondary incarnation of the deity, prohibit image-worship, and abstain from eating pork. They admit the authenticity of the Indian Vedas, which, as well as the Koran, they consider to be of divine origin; but they allege that the Hindoo religion has been corrupted by the introduction of polytheism, and that the worship of images has withdrawn the people from that of the true God. Their temples, of course, contain no idols, and their prayers are of the most simple description. Adults are admitted to their communion through a species of baptism or initiatory rite. This religion underwent great reforms during the pontificate of Gouroo-Govind, who died in 1707, and who is considered by the Sikhs as a new prophet, and the founder of their power as a nation. The Sikhs being essentially a warlike people, no distinction of castes is known among them;

they deem it a duty to abstain from the use of tobacco; also to allow their beards and the hair of their heads to grow. A numerous body of religious warriors, called *Akhalies*, have the charge of everything that appertains to their worship. These, generally speaking, are both fanatics and fatalists, and moreover, are the most turbulent and dissolute portion of the Sikh community. The Sikhs are principally resident in the province of Lahore in India, where for nearly a century they formed a republic, or community of tribes, united by the common bond of religion; but latterly, all of them to the west of the Sutlege have fallen under the dominion of one chief, the maharajah Runjeet Singh. The name, or title of *Singh*, or lion, is proudly assumed by the whole people. Their spiritual head, or *gooroo*, resides in a mountain fortress near Umbritser, the capital of the sect, where he receives every mark of attention from the maharajah.

It is difficult to state with any degree of precision the number of followers belonging to each religion actually existing in the world. The following Table exhibits the estimates of the most distinguished statists, all of which may be regarded as nearly contemporaneous, since those of Malte-Brun and Graberg were published not farther back than from 1810 to 1813; M.M. Walckenaer and Eyrics', in their new edition of Pinkerton's Geography, in 1827; that of Hassel in the same year; and Balbi's in 1837.

Religions.	MALTE-BRUN.	GRABERG.	PINKERTON.	HASSEL.	BALBI.
Christianity in all its branches, .	228,000,000	236,000,000	235,000,000	252,566,000	260,000,000
Judaism, . . .	5,000,000	5,000,000	5,000,000	3,930,000	4,000,000
Islam, ...	110,000,000	120,000,000	120,000,000	120,105,000	96,000,000
Brahminism, .	60,000,000	60,000,000	60,000,000	111,353,000	60,000,000
Buddhism, . . .	150,000,000	150,000,000	180,000,000	315,977,000	170,000,000
All other religions,	100,000,000	115,000,000	100,000,000	134,490,000	147,000,000
Total, . . .	653,000,000	686,000,000	700,000,000	938,421,000	737,000,000

Balbi's estimate in detail is as follows: —

Christianity — The Latin or Romish Church, . . .	139,000,000?	
The Greek Church, and all its branches, .	62,000,000??	
The Protestant Churches and Sects, . .	59,000,000?	
Total of Christianity, .		260,000,000
Judaism, ...		4,000,000?
Islam, or Mahometanism, ...		96,000,000??
Brahminism, ...		60,000,000??
Buddhism, ...		170,000,000??
Religion of Confucius, Sintism, Mythological Naturalism, Nanekism, and Fetishism, ...		147,000,000??
Total of all religions, ...		737,000,000??

We feel the responsibility of venturing to differ in opinion from so eminent an authority as Balbi; but it appears to us, that in the foregoing statement he has singularly under-rated the numbers of the followers of Brahminism and Buddhism. Our own estimate is —

Brahminism, ...	120,000,000
Buddhism, ...	320,000,000
All other religions (as in Balbi's estimate), . . .	507,000,000
Total, . .	947,000,000

Our reason for departing so widely from Balbi's estimate of the Brahminists and Buddhists, is simply this: The population of India is believed, by those best acquainted with the country, to fall very little short of 200,000,000,* of which nine-tenths profess Brahminism. To keep within bounds, we have restricted our estimate to 120,000,000. The absolute population of the whole Chinese empire, which contains the bulk of the Buddhists, Balbi estimates by his approximative method at 150,000,000. Messrs. Gutzlaff and Morrison give it, upon the authority of an actual census, at 367,000,000; and Mr. Gutzlaff declares himself to be "fully persuaded that the last imperial census is as near the truth as it can be ascertained."† Those parts of the empire he visited are extremely populous. He took the trouble of examining some parts of the census, and numbering the houses of small districts, and invariably found that the population was under-rated. We have therefore made our estimate of the number of Buddhists correspond with what we believe to be the real amount of the population of the Buddhist countries.‡ With respect to Islam, we are not disposed

* *Martin's British Colonies*, Vol. I. † *Gutzlaff's Sketch of Chinese History*, Vol. I.

‡ Professor Neuman of Munich, in an article on the nations and literature of the East, published in the *Journal Asiatique*, August 1834, gives the following tabular estimate of the number of the Buddhists: —

China, ...	200,000,000	Indo-China, ...	25,000,000
Mandchoos and Mongols, . .	5,400,000	Ceylon, ...	600,000
Japan and Loo-Choo, . .	25,000,000	Nepaul, ...	2,000,000
Thibet and Boutan, . . .	6,000,000		
Corea, ...	5,000,000	Total, . . .	269,000,000

The difference between Professor Neuman's estimate and our own arises chiefly from his having under-rated the population of China.

to increase the estimate, because from extreme misgovernment, and the immense extent of sandy deserts that occupy so great a part of the Mahometan world, the population of these countries is really very small in proportion to their size. The best estimate, however, upon the subject, is merely conjectural.

§ 4. *Of Mankind in respect to Civil Government and the Customs of Society.*

Languages and religious creeds may be regarded as the moral ties which bind society together, and these often survive the fall of *civil and political societies.* As it is by the latter, however, that the boundaries of those states and empires which it is the province of political geography to describe are determined, we must therefore take a general view of their varied forms.

Families or domestic societies originate in the ties which unite husband and wife, parents and children. Such of them as resided in the same neighbourhood, would, after quarreling for a while, at length discover that their interests would be best promoted by living in harmony together. Certain rules would be established amongst them, not originally considered as laws, but as customs merely. The union of these families did not form a state, but only a civil society. These small societies must soon have perceived that their customs and observances required to be fixed, or vested with the character of laws. Men of superior natural capacity would become the unlettered lawgivers of these hamlets or villages; or, more probably, perhaps, the circumstances under which they were placed would suggest to them the propriety or advantage of enacting rules for their common guidance, without owing much, or it may be any thing, to any particular individual. As soon as the various relations in which men stood to each other were fixed by laws, political society commenced.

Societies were at first without any efficient government, and, consequently, a prey to the evils of anarchy. This taught man that a physical force is indispensably requisite to support the laws, which of themselves have a force purely moral. A *government*, of some sort or other, was in this way established. At first of a rude and simple form, it was gradually brought nearer perfection, as evils were disclosed by experience, and as the sagacity with which man is endowed, profiting by the same experience, devised the means of obviating them. Government has been, in all cases, the offspring of peculiar circumstances, modified partly by intelligence and partly by force. The notion entertained by Locke and some other philosophers, who contend the laws and regulations of civil societies were settled by compact in conventions held for that purpose, is entirely visionary and without even the shadow of a foundation.

By a *nation* is meant the whole body of inhabitants occupying a particular tract of country, and subjected to the same authority; and by a *constitution* is meant the body of laws and customs which determine the form of government of a nation, and define the respective rights and obligations of the governing power and its subjects, whether the latter are all placed on the same footing, or are divided into classes possessing different rights and privileges.

By the *government of a country* is meant the individuals in it vested with *supreme power*, that is, with the power of making laws and providing for their execution; the servants of government comprise the various individuals employed to defend the state against foreign aggression, to maintain security and good order at home, and to expound the laws and carry them into effect. The supreme power may be divided into different branches, such for example as the *legislative power*, subdivisible into the proposing, the deliberating, and the decerning power; and the *executive power*, subdivisible into the administrative, military, judicial, and inspectorial branches. These divisions are partly arbitrary. The manner in which the supreme power is organized, subdivided, and concentrated, constitutes the form of government.

Forms of government admit of innumerable variations. We shall point out those most generally known, beginning with those in which the powers of government are most diffused; proceeding through the intermediate degrees to those in which they are most concentrated. The extremes approach each other more nearly than is commonly imagined.

Pure democracy exists, as the term applies, wherever the supreme power is immediately exercised by the majority of the nation. *Commissorial democracy* exists when the supreme power is exercised by a council chosen by the people, and which is revocable by, and responsible to them. Such functionaries are not the representatives of the nation, but merely its delegates or commissioners. A nation is governed by a *representative democracy*, when the supreme power is exercised by magistrates, chosen

by the people, who represent them, and who, consequently, taken collectively, are sovereign and not responsible. This form is subdivided into a pure democracy, when the people themselves directly choose their representatives, and into a representative electoral democracy, when the people choose electoral bodies, who again elect the representatives.

Elective aristocracy resembles representative democracy. It exists when the people, either directly or mediately, choose their magistrates, not indifferently from among the citizens, but from a certain class determined by law. Elective aristocracy is pure or free, when the people have created the privileged class, or the aristocratic body, when admission into that body is open to all citizens, and when its members are amenable to the supreme power in the hands of the people. *Simple* or *pure aristocracy* exists when the people choose, once for all, as their plenipotentiary representatives, a governing body renewable without their concurrence; or when such governing body has seized or usurped the supreme power. Every form of government compounded of those now named is called an *aristo-democracy.* When the aristocratic party seems predominant, we have a temperate aristocracy, when the democratical, we have a temperate democracy. Rome, after the expulsion of the Tarquins, was an hereditary oligarchical aristocracy, which gradually changed into an aristo-democracy, composed of all the other kinds. The Patricians were the hereditary aristocratic body; the senate an elective free aristocracy; while the assemblies of the people represented the democracy.

A democratic monarchy is a democracy in which the supreme power is partly exercised by an individual and partly by a democratic body. As the supreme power may be variously divided, it is impossible to determine the different kinds of democractical monarchies. It may be hereditary, or enjoyed by a certain family, or elective, a monarch being chosen at each vacancy. The right of election may be vested in the people, in an electoral body, or even in a single elector. These variations are common to other kinds of monarchy. The legislative power may be divided between the representatives or commissioners of the people and the monarch, or it may belong to the former only or to the latter. The judicial and military powers may be dependent upon the monarch, or upon the body of the nation. The democratic body itself may be chosen without, or with the concurrence of the monarch.

An *aristocratical monarchy* is a government in which the supreme power is jointly shared by the monarch and the aristocracy. This latter body may be a free elective aristocracy, as when an assembly of representatives chosen by the people forms the council of the monarch; an elective hereditary aristocracy chosen by the people, or by the monarch, or by both conjointly: or lastly, a pure and perpetual aristocracy, independent alike of the people and the sovereign. Such was the nobility in most European states before the present epoch. An aristo-democratic monarchy is a government composed of a monarch, an aristocratic body, and a democratic body. By a mixed government is generally understood a monarchy of this description. The different combinations of this form are so multiplied, that it is impossible to classify them.

A *pure* or *absolute monarchy* is that in which the supreme power is entirely confided to one individual, or, in which a single individual represents the majority of the nation. Absolute monarchy is said to differ from despotism in this, that the monarch holds his power of the nation, either by expressed or tacit consent, and is supposed to be governed by certain fundamental laws; whereas the despot pretends to hold his power from God and his sword, and to be the uncontrolled master of the lives and properties of his subjects. The dictatorship was a kind of absolute monarchy, elective and temporary, in the Roman republic.

The term *anarchy* means the absence of government. Taking the word government in its true and literal signification, it is evident that anarchy may arise in two ways: 1*st*, From the non-existence of any supreme power in civil society; or, 2*d*, From the preponderance of unconstitutional power, exercised in an arbitrary manner and without the forms of government. Anarchy may be modified in a thousand ways. The following are such of its forms as appear most worthy of definition:—*Ochlocracy*, or *popular anarchy*, takes place when the supreme power is unlawfully usurped by a mob or multitude. Hence, according to this definition, even the majority, where they are not legally vested with sovereign authority, can exercise only anarchical power. *Oligarchy* occurs when a small number of individuals or families exercise the supreme power without being chosen by the body of the people or of the aristocracy. *Demagogy* occurs when one or several individuals, without legal appointment, lead and manage the people at their will, actually exercising the power which they seem to leave

in their hands. The word *tyrant* signified originally chief or monarch. Virgil employs it more than once in this honourable sense, but it was afterwards applied to denote those who, though living in republics, usurp the powers of absolute monarchs. This is the ordinary sense of the term in the Greek and Roman authors. The moderns apply it to those guilty of any violent and cruel abuse of authority.

Despotism has been sometimes confounded with tyranny, and sometimes with absolute monarchy. Despotism is absolute power, not derived from a lawful source, and consequently acknowledging no limits. The despot pretends to be as much master of his country and of his subjects, as a private person of his estate and his cattle. Despotism is not necessarily tyrannical, that is, cruel and violent; nor is it absolutely incompatible with some administrative forms, and with institutions which properly belong to regular States, or even to Republics.

It would be improper to class with these forms of governments, or of anarchy, the singular state termed *theocracy*. "It is," say the theologians, "a government instituted by God himself, the magistrates governing in his name." Such was the constitution of the Jewish people — with them theocracy was united first to democracy, and then to monarchy. The popes, in the dark and middle ages, attempted to establish a theocracy upon a great scale.

We have still to notice the *federal systems*, or unions of several independent States, under a superior authority chosen by themselves, and vested with powers more or less extensive, to maintain mutual order, and to furnish the means of defence against external enemies. We may term a confederation, of which all the constituent members are on an equal footing, a *democracy of States*: Several of these unions exist in America. There have been, however, confederations with a chief or presiding power: the late Germanic empire was of this nature. Confederations have sometimes subjects in common: that of Switzerland held several districts in this manner.

Political geography considers in societies of men, besides the general tie, or the form of government, the *particular ties which bind individuals to society*, and which result from the station assigned to these individuals, or from their division into classes and orders.

In the earlier stages of society the *divisions* of *labour* would be few and imperfect; but the advantage of assigning particular tasks to particular individuals, in the carrying on of some employments, even the rudest and simplest, such as hunting and fishing, is so great and obvious, that the introduction of the practice must have been coeval with the first establishment of societies. As population increased, the advantage of carrying these divisions still further would become more apparent, until, at length, individuals would addict themselves wholly to particular callings; and a system of barter and exchange come to be universally adopted.

Money was introduced to faciliate exchanges; not, however, at once, or by the genius of any individual, but by slow degrees, according as experience served to disclose the inconveniences of previous practices and the means by which they might be obviated.

It is not only necessary to the successful prosecution of employments that they should be divided, but it is further and perhaps more essentially necessary that *capital*, that is, food and clothing, and instruments, should be provided for the support and employment of the individuals engaged in any sort of work that does not yield an almost immediate return. Capital is the result of saving. It is a law of nature that industrious individuals do, generally speaking, produce a greater quantity of useful and desirable products in a given time, than is required for their consumption during the same time; and the providence and forethought with which man is endowed, make most persons accumulate this surplus as a capital, or stock. But all are not placed in equally favourable circumstances for the accumulation of capital; and though their means were equal, all are not equally disposed to avail themselves of them; and hence, the distinctions of *rich* and *poor*, which are as natural to society, and make as much a part of the scheme of providence, as differences of colour, sex, or strength. Hence also the distinction of employer and employed, or of *masters* and *servants*. Those who have succeeded in amassing capital, hire, by its means, the services of those who are in want of it; so that, in this way, all classes are benefited by the progress of accumulation, and by that security of which it is the result.

The *right* and *security of property*, to which allusion has now been made, forms, in fact, the foundation on which all the wealth and institutions of society rest. No savage horde has ever been discovered in which the principle of *meum* and *tuum* was not recognised; and every nation emerging from barbarism has always endeavoured to secure to individuals the full enjoyment and free disposal of the property acquired

by their industry, or bequeathed to them by others. The principles of human nature, and the experience of all ages and nations, concur equally in establishing the important truth, that without the security of property, neither industry nor civilization can continue to exist. The greater the respect paid to property, the more effectually it is protected from the attacks of the needy, the profligate, and the powerful, the more industrious, opulent, and civilized will the nation be.

In a highly civilized society the orders and employments of men are infinitely various; but they may, notwithstanding, be divided into a few great classes, each of which has, however, almost innumerable subdivisions. We have only room to specify the classes of agriculturists, manufacturers, merchants, and public functionaries.

The *agricultural class* comprehends, in its most extensive sense, all those who derive from the earth, water, &c., any productions useful to society, comprising of course, cultivators of the soil, fishermen, vine-dressers, miners, &c. There are tribes composed entirely of one of these classes. Such are the pastoral tribes, or *Nomades*; the fishermen, or *Ichthyophagi*. In civilized states, there exists a class of a peculiar kind, that powerfully contributes to the production of national riches of inestimable value and perpetual duration. It consist of men of science who enlarge the empire of knowledge, and men of letters, who purify the taste, refine the sentiments, or elevate the morals and manners of the age.

The *manufacturing class* consists of those who convert raw into artificial products. When the processes followed by the workmen require unusual genius and taste, they obtain the name of the fine arts. When they chiefly demand corporeal strength and dexterity, they are called the mechanical arts. A manufactory is an establishment where an art is conducted on a large scale. The name *work* seems to denote one of these establishments in which extensive and powerful machinery is employed.

The *commercial class* is composed of the merchants or dealers who buy and sell, either on a great or small scale, the various productions of nature and of art; of correspondents or agents employed by the merchants to faciliate the execution of purchases and sales; of bankers and brokers, who confine their operations to the transacting of pecuniary affairs; and, lastly, of mariners and carriers, who convey commodities from place to place.

We comprise in one class all *public functionaries*, including the sea and land forces. They are vested with a greater or less proportion of the force of the state; and are the agents or instruments of the supreme power.

The numerical proportion in which these classes are met with in a state is one of the most interesting questions of statistics. We decide according to it whether a nation is to be reckoned agricultural or commercial.

Classes have their foundation in the very nature of society itself; but *castes* or *orders* have been created by laws and constitutions. By the word caste is understood an hereditary class, exclusively assigned to one species of occupation. This system of division existed in Persia, Arabia, and Egypt, and it still exists in India. It is accounted for in a satisfactory manner, by referring to the original difference of the primitive tribes, whose union formed the nation. The castes of priests and of warriors in Egypt, were probably two clans somewhat organized and disciplined, who subjected the tribes of husbandmen and shepherds. The conqueror disdained to intermingle with the vanquished; and the laws afterwards sanctioned and perpetuated a system of separation which accident had originally established.

The *political orders* in the states of Europe differ from castes in this, that they have either no occupation exclusively reserved for them, or if, like the clergy, they have any such, it is not hereditary. In the middle ages, when armies consisted of cavalry, the nobility partook largely of the nature of a caste; but the nobles are now merely an order of the state. The citizens, commonalty, or third order, and the peasants, form in some states orders recognized by the constitution. In Sweden, the order of peasants possesses much influence. The same was formerly the case in the Tyrol. There are still, however, some countries, particularly Russia, where the husbandmen, subjected to the yoke of personal slavery, form a real caste, condemned to a state of abject and perpetual degradation.

In despotic states, as in Turkey and in China, there are no orders.

Slavery renders all individuals equal. In Europe, it is the "*esprit de corps*," the corporation or professional spirit of the different orders, and the equilibrium resulting from their various prerogatives and interests, contending with each other and with the supreme power, which secures political liberty. On this account, therefore, in describing Europe we shall have to explain the orders of knighthood, honorary distinctions, and other institutions, whose object either is to mark degrees in the scale of society, or to render the distance between them less felt and less perceptible.

The enumeration of the various *denominations by which different states are designated*, would be uninteresting. The application of the terms empire, kingdom, sultanat, khanat, and others, will be learnt in the descriptive part of this work. It would be equally useless to consider in this place the titles which the heads of states assume, from the unostentatious President of the United States, to the Emperor of China, who is called the son of heaven, or the Persian monarchs, who style themselves kings of kings, princes of the stars, and brothers of the sun and moon. It is needless to say that such bombastical epithets have no influence over the prosperity or power of states. Political geography hardly deigns to notice the arms and colours by which different states mark their ensigns, flags, and frontier posts.

It is a matter of much greater importance to ascertain the material *resources of the state*. This is the particular object of an extensive science, termed political arithmetic; its results must, however, have a place in the descriptions of political geography.

The first element is the *value of land*, and its produce. Here the different productions of the three kingdoms of nature are to be classed according to their utility, and their value as articles of merchandise. The government itself knows, only by approximation, the value of what agriculture, the fisheries, and the mines produce, and what is the exact proportion between the commodities which the nation sells, and those which it buys. Governments, however, do not often publish even the imperfect information of this kind which they possess, and therefore political geography cannot absolutely warrant the accuracy of the lists of productions, of exports, and imports, which it is obliged to collect with so much trouble. To render these details as useful as possible, it is necessary to know the proportional values in which lists of this kind are made up; the monies, weights, and measures of each country. This subject, which presents a different aspect in every state, will come to be considered in our particular descriptions.

In the second rank, amongst the elements of the national resources, should be placed *commercial* and *manufacturing industry*. It was this which accumulated on the rock of Tyre, on the barren coasts of Attica, and on the flat sandy shores of Alexandria, the treasures of the ancient world; and which, in modern times, raised Venice and Holland to greatness. The political geographer should consider the nature and situation of the coasts of a country, the number and capacity of its ports, and the state of its roads and canals and railways; circumstances, each of which directly influences the progress and prosperity of national industry. It is likewise necessary to attend to the various commercial institutions, such as the great national banks, which facilitate all sorts of commercial operations, and the trading associations, amongst which there are some that possess in sovereignty vast provinces beyond the boundaries of Europe.

The *population of a state* forms the third element in estimating its resources. The proportions between the deaths, the births, and the number of living inhabitants in a country, enable us to approximate pretty nearly to its total population; but it is only by a census that it is ascertained exactly. And even when we have an authentic census, we must examine into the mode in which it has been taken before trusting to it implicitly. The same individuals are sometimes counted twice, which happens every time that the inhabitants of the country are numbered in summer, and those of the towns in winter. A census ought, if possible, always to be taken all over the country on the same day.

The number of inhabitants is an important element in every good system of finance: the more individuals a country contains, provided they have the means of subsistence, the greater progress will commerce and manufactures make; and, consequently, the greater will be the increase of revenue. The number of inhabitants ought equally to determine the number of troops. It is computed that the men capable of bearing arms, form about a fourth part of the whole inhabitants. The greatest effort, however, that the most warlike state can make in a case of extreme necessity, is to arm about an eight part of its population. No example even of this has occured in modern history.

Let us observe also that the more a mass is concentrated, provided it has space sufficient to move in, the more energy it will acquire. A small populous country, therefore, is, in proportion, more powerful than a state of vast extent thinly peopled. A country is looked upon as populous, when it contains about 100 inhabitants to the English square mile. England in 1830 was peopled at the rate of 258 to the square mile: Ireland at the rate of 256, and Scotland at the rate of 78. Wales has 108 to the square mile. Holland had, before the troubles of 1788, and the revolution which followed them, 212 inhabitants for each square mile, which makes 1908 for each square English league. The island of Malta is probably the most thickly peo-

pled country, having nearly 800 souls to the square mile. But these are to be regarded only as rare local exceptions; and it is common enough to find, in European Russia, governments which have not more than 30, or even 20 inhabitants to each square mile.

The attempts which political arithmeticians have made to compute the value of the aggregate *revenue of a whole nation*, arising from the employment of its capital in the cultivation of the soil, and in the various branches of commerce and the arts, have hitherto produced only proximate results, more or less accurate according to the correctness of the data from which the calculations have been made. Political geography exhibits merely the revenues at the disposal of government, and the principal sources whence they flow. In many countries this information is furnished by the *annual budget*, or tabular view of the income and expenditure laid before the aristocratic or democratic body, sharing in the supreme power. As the budget, however, is sometimes intended to neutralize the unfavourable impression which may have been made by the increase of the *public debt*, it occasionally exhibits fallacious details: In absolute monarchies this device is superfluous; — but there the correct estimates often remain buried in the ministerial *bureaux*, until some lucky chance, or the will of an enlightened sovereign, gives them a useful publicity. As it is only in Europe and America that there exists a regular system of finance, so it is in the descriptions of those parts of the world that we shall point out the different species of taxes and duties, and the various ingenious artifices by which civilized governments contrive to extract money from the pockets of their subjects, while the chiefs of barbarous nations carry off, *in kind*, and most frequently in an arbitrary and irregular manner, the articles which they require.

An *armed naval and military force* is unfortunately, but necessarily, an object of the first importance to every government.

Savage tribes, and even some half-civilized nations, are accustomed to march against their enemies all the males fit to carry arms. Nothing prevents them from doing so, as fishing and hunting are occupations which they may carry on when under arms. Under other circumstances, the women may be sufficient for the employments of agriculture and the tending of cattle; but as soon as labour is multiplied, and, in consequence of this, comes to be divided, that is, as soon as the agricultural, manufacturing, and commercial classes, have each a separate existence and place in society, it is impossible to arm and to bring into the field the entire mass of a nation, without completely suspending the exercise of those trades and occupations on which its subsistence depends. It therefore becomes necessary to form a class exclusively devoted to the trade of war; such was, in the middle ages, the design of the orders of nobles and of knights; but the invention of gunpowder and artillery, the introduction of a new system of fortification, and the perfection to which tactics have been brought, have converted the formerly simple and almost mechanical art of war into a profound and extensive science, to the study of which many years must be devoted. This consideration, strengthened by motives of ambition and policy, gradually paved the way for the establishment of standing armies. The European powers have had, for more than a century and a half, a certain number of troops in a state of perfect discipline and equipment, ready to march at a moment's notice. A third, and often a half of the public revenue, is consumed in supporting these troops. The *land force*, or *army*, is composed of four principal parts, or arms, with their subdivisions; namely, the infantry, or combatants on foot; the cavalry, or combatants on horse-back; the artillery, whose province is to work those destructive engines on the skilful management of which the issue of battle frequently depends; and the engineer department, which conducts the defence and attack of fortified places. In the description of a kingdom, not only should we point out the number and situation of its fortresses, the passes and defiles of greatest importance, as well as the number of troops which it maintains; but it is farther necessary to mention, whether these are regular troops, or bands without discipline or military science, and also to specify the physical advantages and disadvantages of the frontiers.

In like manner, it is not enough to know the number of ships of which the *navy* of a state consists. We must also ascertain whether it possesses an adequate number of skilful officers and experienced sailors. We must observe whether it comprehends in its dominions extensive coasts, furnished with safe and commodious harbours, or touches the sea only in some insulated points. According to circumstances, a state may require a fleet of ships of the line, and frigates, to fight on the open sea, or a flotilla of gun-boats to defend its coasts, its straits, and its ports.

Finally, states have also, besides their own peculiar forces, *a force of situation depending upon their external relations:* and particularly, on the alliances, whether diplomatic or natural, which render them the friends or enemies of each other. The equilibrium resulting from the alliances of the different European nations, is called the "*balance of power.*" This equilibrium has frequently been subverted; but in the study of political science it is nevertheless of importance to examine the principal basis on which it rests.

The *moral state of a nation* is the result of the various political and social relations we have been specifying. This state is indicated by various signs, of which the political geographer ought to notice the most striking.

The *mode of dress* is more than a simple object of curiosity; the loose flowing habit of the orientals, and the tight clothing of the European, exert an influence on their physical and moral constitution. The nudity of certain nations procures to them corporeal advantages, an agility, a strength, and a robustness of health, unknown to nations whose limbs are encumbered with garments; but this superiority is more than counterbalanced by extreme indolence and feebleness and torpor of understanding. The custom of painting the body, whether by imprinting or marking figures upon the skin, or by simply besmearing it with a coat of colouring, marks the infancy of civilization, and the first working of vanity. Rank and dignity are frequently indicated by the vestments, or by the ornaments with which they are embellished. A sash of cotton cloth of a particular kind, is the distinguishing badge of royalty in Otaheite. The priests of Siam reserve to themselves the privilege of shaving their eyebrows. Among the negro nobility, a necklace of human teeth supplies the place of the star which decorates the corresponding order in Europe.

The ordinary *habitations* of a people, are an almost infallible index of the degree of civilization at which they have arrived. The human race may be divided into four classes, according to the four kinds of habitations which follow: — 1*st*, Caverns in the rocks, and under ground. They who make these their common abodes, are called Troglodytes. 2*d*, Huts of earth, branches of trees, stones, or some other substance, either in the natural state, or coarsely wrought. 3*d*, Tents; these moveable dwellings, in the opinion of wandering pastoral tribes, appear preferable to our palaces. 4*th*, Houses, which may be defined huts brought to a state of perfection; for even the most superb colonnade is merely a noble imitation of the coarse beams which supported the thatched roof. We find in Europe, houses constructed of unsquared beams, of beams that are squared and lined with wainscoting, of prepared clay and squared timber, of bricks and wood, of bricks alone, of unhewn stone, of hewn stone, and of polished marble.

The name of a *city* or *town*, strictly speaking, is not given to a collection of houses on account either of its extent or its population, but in consequence of certain privileges which the place enjoys. The right of exercising the various arts and trades, and of conducting commerce, serves in most countries chiefly to distinguish cities and towns from *villages*. The latter are sometimes larger than towns, for example in Silesia; but they have commonly no privilege to distinguish them from hamlets and other assemblages of houses in the country. *Burghs* are places which enjoy a portion of the rights granted to cities. In other respects, these words admit of different senses, according to the peculiar laws and customs of different countries.

Utensils and *instruments* are objects no less worthy of the attention of a philosophical observer. The bows, the javelins, and the nets of savages, often deserve to be admired for the perseverance and dexterity manifested in their production.

The European is accustomed to make almost every nutritive substance minister to his support, or to the gratification of his palate. But there are nations that live almost exclusively upon one kind of *food*. The frugivorous, carnivorous, and ichthyophagous tribes are distributed over the whole surface of the globe. The taste for horse-flesh appears peculiar to the Mongols, Tartars, Finns, and other descendants of the Scythians, and to the Sclavonic and Gothic nations. Both ancient and modern writers place the Acridophagi, or eaters of locusts, in Africa. Some of the American tribes visited by Humboldt, devour a species of clay. Respecting Anthropophagism, or the horrible custom of eating human flesh, it appears to be proved that it does not belong exclusively to any nation; all savage tribes are addicted to it, either from the impulse of a ferocious hatred of their enemies, or by the dictates of an atrocious superstition, or finally, in consequence of extreme want. Not only do modern accounts assert that the practice obtains in the greater part of the nations of Africa, America, and Australia; but we discover from several passages in the ancients, that it was at one time prevalent in Europe. The poets ascribe it to the Cyclops and

Lestrygons, whom they place in Sicily. Historians bring this charge against the Scythians, the Cimbrians, a tribe of Caledonians, and other nations of the north. Human sacrifices were known amongst the Greeks and Romans, as well as the Celts, Scandinavians, and Oriental nations. These horrid sacrifices appear to have been often succeeded by a repast still more horrid. The disgusting practice of burying the dead bodies of their relations in their own bowels, was formerly attributed to the Issidones, and the Massagetæ; to several tribes of India; and to the people of Thibet and the Marian Islands.

The desire of procuring a momentary elevation of spirits has caused the invention, amongst all nations, of *intoxicating liquors*. Their different properties, from the generous wine of Europe to the loathsome kava of Otaheite, deserve to be pointed out in the geographical descriptions of the respective countries.

From the immense variety of *customs*, which impart to social life, in every nation, its peculiar features, political geographers select the most striking, namely those which are most closely connected with morals, and which serve to illustrate the history and filiation of the species. Such is the circumcision practised amongst the African nations which do not profess Islamism; the custom of embalming dead bodies, common alike to the Guanches of the Canary islands, and to the ancient Egyptians; the fashion of letting the bodies of the dead dry and wither away in the air, common to the Otaheitans and the ancient Medes; the custom prevalent among the females of India, and the wives of the Wendes and Scandinavians, of immolating themselves upon the tombs of their husbands; and in general the ceremonies observed at marriages, births, and funerals, present resemblances that are often highly interesting.

Civil laws sometimes present singularities which deserve to be marked in the description of a nation. But it is sufficient to notice regulations which punctiliously prescribe silly ceremonies of a degrading etiquette; punishments revolting to humanity; graduated scales of murders, and mutilations, and tortures; superstitious ordeals, still prevalent amongst different nations, and a thousand other similar observances of ancient barbarism, or derived from a more recent despotism.

The *intellectual state of society* closes this lengthened view of the various aspects under which nations may be contemplated. Do they possess an accumulated store of the discoveries of genius, and of the observations of wisdom? Do they cherish, in the sublime and beautiful effusions of poetry, the expression of the noblest sentiments of humanity and patriotism? Do men of science and literature occupy the honourable rank to which they are entitled? These are questions which require to be satisfactorily solved before we can determine the progress which a nation has made in civilization and in morals.

The general result, the collected effect of all these aspects and relations, to which our attention has been drawn, constitutes the character of a nation. Nations may be distributed into three general classes. *Savages* are those, who are ignorant of the art of writing, or of fixing their thoughts by means of conventional signs equivalent to writing. Their vague and unsteady ideas are attached only to objects which strike their senses; they delight to adorn their persons in a manner which we deem ridiculous; they are passionately fond of bodily exercise, and in this respect they infinitely surpass us. Their industry is generally confined to a little gardening, fishing, and the chase. Some of them, however, produce specimens of beautiful workmanship, and have even commodious and elegant habitations. The class of *barbarians* or *men half civilized*, comprehends every nation which, by writing, by written laws, by a religion expressed in ceremonial observances, or by a more regular military system, has evidently emerged from the savage state. But the information which such a people possesses is as yet only an indigested mass of incoherent observations: their arts are exercised as it were by routine — their policy is limited to the defence of their frontier, at the moment of danger, or to offensive operations conducted without a plan. Their progress is, in general, slow and uncertain, because, even in advancing towards civilization, they have no proper conception of the great objects at which they should aim. A civilized nation is that which has arranged its knowledge in the form of sciences; which has elevated the mechanical to the rank of the fine arts; which, to express the various sentiments of the human heart, has created a literature of the highest order; which is possessed of a fixed system of legislation, of policy, and of war, calculated not only for existing circumstances, but for ages to come; a nation which recognises the great principles of public law, by acting in time of peace as the friend of every other state, and by respecting in time of war the property of defenceless citizens; a nation, finally, in which Christianity, undefiled by superstition or en-

thusiasm, displays its appropriate influence in the purification and elevation of the public morals.

We now proceed to give the details of Descriptive Geography, which will constitute the sixth and largest division of our work.

DESCRIPTIVE GEOGRAPHY.

EUROPE.

GENERAL DESCRIPTION.

PHYSICAL GEOGRAPHY.

Astronomical Position. — *Longitude* (of the Continent) — between 9° *west*, and 68° *east: Northern Latitude* (of the Continent) — between 34° and 71°. If the islands, geographically its dependencies, such as Nova Zembla, Spitzbergen, &c. be included, Europe will then be comprehended between 10° *west longitude*, and 70° *east*, and extend to 81° *north latitude*.

Dimensions. — *Greatest length:* — From Cape St. Vincent in Portugal, to a point in the chain of the Urals, in the neighbourhood of Iekaterinbourg, in the government of Perm, in Russia, 3372 miles.* *Greatest breadth:* — From Hammerfest in Finmark, in Sweden, to the central chain of the Caucasus, near Mount Kazbec or Mquinwari, 2100 miles. The absolute greatest breadth of Europe is 2400 miles, measured from Cape Nord-Kyn in Finmark, to Cape Matapan in the Morea. The narrowest portion of the European Continent, washed by opposite seas, is situate between the Gulf of Kandalaskai, a branch of the White Sea, on the east, and the Gulf of Bothnia, near Kemi, on the west. The next most remarkable contraction of the Continent is between the Bay of Biscay on the west, and the Gulf of Lyons on the east. The width of the former of these contractions is 200 miles; that of the latter, 230 miles.

Boundaries. — *Northern:* — The Arctic Frozen Ocean. *Eastern:*† — The river Kara Baïgarama; the main chain of the Urals; the river Ural; the coast of the Caspian, from the mouth of the Ural to the eastern extremity of the Caucasian chain; the Strait of Ienikale; the Sea of Marmora; the Dardanelles, and the Archipelago. *Southern:* — The principal chain of the Caucasus; the Black Sea; the Mediterranean and its different branches; the Strait of Gibraltar; and the Atlantic ocean. *Western:* — The Atlantic Ocean, as far as the polar circle; and beyond that circle, the Arctic Frozen Ocean, or Icy Sea.

Seas and Gulfs. — The Atlantic Ocean, which forms the western boundary of Europe, is named by some geographers the Western Ocean. It receives, besides, several other appellations, for the most part borrowed from the names of the countries of which it washes the coasts.

That portion of the Atlantic situate between Norway to the south of Cape Stadt (Stadtland), Jutland, Germany, Netherlands, France, Great Britain, and the

* English statute miles, 69.157 to a degree of the equator. The same denomination will be preserved throughout this work, unless otherwise stated.

† How to determine the *eastern* and *south-eastern boundaries* of Europe, has occasioned (at least until lately) much division of opinion among geographers. At the beginning of the present century, Malte-Brun perceived the importance and advantage of adopting the natural boundary line traced by the river Ural and the Caspian. For the prolongation of this line westward, he proposed, in his *Précis*, to follow the inferior level of the Caucasian isthmus, as indicated by the courses of the Kouma and Manytch rivers; but he afterwards, in a work which he did not live to complete (the *Abrégé de Géographie*) selected a natural frontier more important and easier to be determined, namely, the ridge-line of the chain of Mount Caucasus.

We may also here remark, in reference to *island dependencies*, that we shall throughout this work be guided by the principle laid down both by Malte-Brun and M. Balbi, that relative proximity ought to determine to what continent an island group or an island belongs.

Shetland Isles, is called the North Sea, or German Ocean. It forms a species of Mediterranean, exhibiting several of the most remarkable arms in Europe. The encroachments of this sea on the coasts of Germany and the Low Countries, have produced two gulfs, called the *Dollart* and the *Zuyder-Zee* (South Sea). An arm of the North Sea, between Jutland and the south of Norway, is called the *Skager-Rack*, and by some geographers the *Sea of Denmark*. One portion of it penetrates a deep inlet on the coast of Norway, and forms the *Gulf of Christiana* (Christiania-Fiord.) Another arm of the North Sea, between the south of Sweden and the northern portion of Jutland, takes the name of the *Kattegat*. Two arms of no great size fill the inlets of *Bukke* (Bukke-Fiord), and *Bergen*, on the south-western coast of Norway.

The Atlantic, as it stretches along the coast of Norway to the north of Cape Stadt, is named by some geographers the Scandinavian Sea; to the west of the Strait of Dover it is called the English Channel (*la Manche* by the French) between England and France; between Scotland and England on the one side, and Ireland on the other, it is named the Irish Sea, the southern outlet of which is St. George's, or the Irish Channel, and the northern the North Channel; it is called the Caledonian Sea to the north-west of Scotland; the Gulf of Gascony, along the south-west coast of France; and the Bay of Biscay, along a portion of the northern coast of Spain.

Two branches of the Atlantic Ocean penetrate the European continent, and form large Mediterranean Seas; — the one situate to the north, the other to the south.

The northern of these mediterraneans, the East Sea (Ost-See) of the Germanic and Scandinavian nations, but generally called the Baltic Sea, or simply the Baltic, is a great inland sea, situate between Denmark, Mecklenburg, Pomerania, Prussia, and the Baltic provinces of Russia and Sweden. Its most remarkable gulfs are — the *Gulf of Bothnia*, between the Grand-dutchy proper of Finland in Russia, and Nordland in Sweden; the *Gulf of Finland*, between the south-coast of Finland and the opposite coasts of the governments of St. Petersburgh and Esthonia or Revel; the *Gulf of Livonia* or *Riga*, between the governments of Livonia and Courland; and the *Gulf of Dantzic* in Eastern Prussia. The passage or channel of the Sound, and those of the Great and Little Belts, are the three openings by which the Baltic communicates with the Kattegat, which has already been noticed as a branch of the North Sea.

The southern mediterranean is named the Mediterranean Sea, or simply the Mediterranean. It lies between Europe, Asia, and Africa, and communicates with the Atlantic Ocean only by the comparatively narrow strait of Gibraltar. On the European side, this sea is called the *Balearic Channel* between the coast of the kingdom of Valentia and the group of the Baleares; the *Gulf of Lyons*, along the coast of France between Cape Creuz and Provence; and the *Gulf of Genoa*, from the coast of Nice to that of Lucca. It is named the *Sea of Tuscany*, between Corsica and Sardinia on the one side, and the coast of Italy on the other; the *Sea of Sicily*, between the island of that name and the opposite coast of Naples; and the *Ionian Sea*, between Sicily and the southern portion of Italy and the opposite coast of Greece. One arm of the Ionian Sea forms the *Gulf of Taranto*, between Calabria, the Basilicate, and Terra d'Otranto; another stretching between the islands of Santa Maura, Kephelonia, and Zante, and the opposite coast of Greece and the Peloponnesus, forms the *Gulf of Patras*, which the Strait of Lepanto connects with the *Gulf of Lepanto*, the eastern portion of which forms the *Bay of Livadostro* to the north, and the *Bay of Corinth* to the north. The Mediterranean, after penetrating through the Channel of Otranto, forms between Italy on the one side, and Dalmatia and Albania on the other, a vast gulf, commonly named the *Adriatic Sea*, an inlet of which in the neighbourhood of Venice is called the *Gulf of Venice;* another near Trieste, the *Gulf of Trieste;* and a third, situate between Istria and the opposite coast of military Croatia, the *Gulf of Fiume* or *Carnero* (Il Quarnero.) The Mediterranean, also, after entering the various openings between the islands of Cerigo, Cerigotto, Candia, Caso, Scarpanto, and Rhodes, forms another vast gulf, which separates the Peloponnesus from the opposite shores of Asia Minor. The ancient Greeks named this gulf *Aigaion-pelagos* (Ægean Sea), of which its modern name, the *Archipelago*, is probably a Frankish corruption. The singular indentations of the coasts of Greece and European Turkey form a great many secondary gulfs, the most remarkable of which are those of *Nauplia* and *Ægina* or *Athens*, in the newly-formed kingdom of Greece; of *Saloniki* and *Orphano* or *Contessa*, in ancient Macedonia; and of *Saros* in ancient Thrace.

Beyond the strait of the Dardanelles, the Archipelagan branch of the Mediterranean

expands into a small gulf, between the coast of ancient Thrace on the one side, and that of Asia Minor on the other, and which is inappropriately named the *Sea of Marmora*. It then, by means of the Straits of Constantinople, communicates with the *Black Sea*, a species of lake of vast size, included between the southern coast of Russia, the eastern coast of European Turkey, and the northern coast of Asia Minor. The Black Sea also presents several gulfs, of which the most remarkable are the extensive shallow lake which custom has improperly dignified with the title of *Sea of Azof*, and the gulfs of *Perecop* and *Odessa;* all of which belong to the coast of southern Russia.

The ARCTIC FROZEN OCEAN, which, as has been already stated, washes only the northern extremity of Europe, exhibits several gulfs, of which the most considerable is that called Bieloé Moré, or the White Sea. This extensive arm of the sea is nearly surrounded by the portion of the Russian territory that forms the government of Arkhangel. It has four principal gulfs, namely, those of *Kandalaskaia*, *Onega*, *Arkhangel* (the estuary of the Dvina), and *Mezen*.

The other principal gulfs of the Arctic Ocean are: — *West-Fiorden*, between the Lofoden Isles and the opposite coast of Finmark; the *Gulf of Warenger* (Warenger-Fiord), in Finmark; the *Gulf of Tcheskaia*, in the government of Arkhangel; and the *Gulf of Karskaia*, or *Kara*, between Nova Zembla and the opposite coasts of Europe and Asia.

The great expanse of water, named the CASPIAN SEA, or simply the CASPIAN, is, properly speaking, only the largest lake in the world. Its greatest extent of coast is on the Asiatic side.

EUROPE presents a coast-line nearly 15,000 miles in length. The superficial extent of its inland seas exceeds 1,800,000 square miles; the following table exhibits an estimate of each:—

	Square Miles.		*Square Miles.*
Mediterranean,	867,000	North Sea, or German Ocean,	244,000
Adriatic Sea,	62,400	Black Sea,	181,000
Basin comprehended between Candia and the Dardanelles,	73,400	Caspian,	141,900
Sea of Marmora,	3,800	Baltic with all its branches,	134,900
		White Sea,	38,000
		English Channel,	28,200
		St. George's Channel and Irish Sea,	25,900
Total of the Mediterranean,	1,006,600	Total of Inland Seas of Europe,	1,800,500

STRAITS. — Out of the great number of straits and channels uniting the different European seas and their branches, it may here be sufficient to enumerate the following, which are those that are the most important in reference to navigation: — The *Strait of Gibraltar*, between Spain and Morocco; it unites the Mediterranean to the Atlantic. The *Strait of Messina*, between the extremity of Calabria and Sicily; it forms the communication of the Ionian Sea with that of Sicily. The *Dardanelles*, and the *Strait of Constantinople*, both of which are formed by the coast of ancient Thrace, and the opposite coast of Asia Minor; the first unites the Archipelago and the sea of Marmora; the second the latter sea with the Black Sea. The passage or channel anciently named *Euripus*, between the island of Negropont and the opposite coast of Greece; this strait, so remarkable for the irregularity of its tides, terminates in the *Channel of Talanti* on the north, and the *Channel of Egripo*, or *Negropont*, on the south. The *Strait of Ienikale*, between the Crimea and the peninsula of Taman; it forms the passage between the Black Sea and the Sea of Azof. The *Strait of Calais*, between England and France; it unites the English Channel and North Sea. The *Pentland Firth*, between the northern extremity of Scotland and the southern portion of the Orkney Islands. The *Sound*, between Sweden and the island of Zealand; the *Great Belt*, between Zealand and the island of Fyen; and the *Little Belt*, between Fyen and the opposite coast of Jutland; these three straits form the communication between the Cattegat and the Baltic. The *Strait of Waygats* or *Vaigatch*, between Nova Zembla and the coast of the European continent, in the Russian government of Arkhangel; it is called the *Strait of Kara* by Russian geographers.

CAPES. — Among the many capes which this portion of the world presents, we shall here confine our notice to the following: — *Cape Zelania* (Cape Desire), the northern extremity of the island-group of Nova Zembla; *North Cape*, in the island of Magerōe, in Finmark, so celebrated from the description given of it by travellers; the *Nord-Kyn*, also called *Noss-Künn*, in Finmark, remarkable as being the northern extremity of the European continent. All these capes project into the Arctic Ocean.

On the shores of the Atlantic, and its branches, are found: — *Cape Skagen* or the *Skaw*, in the north of Jutland; *Cape La Hague* (cap de la Hague) in France, in the department of La Manche; *Cape Wrath*, in Sutherlandshire in Scotland; the *Land's End*, in Cornwall in England; *Cape Clear*, in the county of Cork in Ireland; *Cape Finisterre* (Land's End), in Galicia in Spain; *Cape Roca*, in Estremadura in Portugal, remarkable for its being the western point of the continent of Europe; *Cape St. Vincent*, in Algarva in Portugal.

In the Mediterranean and its branches we find: — *Cape Gata*, in the Spanish intendency of Granada, *Cape Palos*, in that of Carthagena, *Cape St. Martin*, in that of Valencia, and *Cape Creuz*, in that of Barcelona; *Cape Corso*, the northern extremity of the island of Corsica; *Point d'Anzo*, in the Comarca of Rome; *Cape Campanella* and *Cape Spartimento*, in the Principato Citra, kingdom of the Two Sicilies, *Cape Spartivento*, in Calabria-Ultra; *Cape Faro* and *Cape Passaro*, in the island of Sicily, the former in the intendency of Messina, the latter in that of Syracuse; *Cape Nau* or *Colonne*, on the east coast of the northern division of Calabria-Ultra; *Cape Leuca* (Santa Maria de Leuca), in the Terra d'Otranto; the *Promontore*, in Istria; *Cape Matapan*, in the Morea, held by all geographers to be the extreme southern point of the European continent, although the coast of Tarifa, in Andalusia, may lie under a more southern latitude; *Cape Maleo* or *St. Angelo*, also in the Morea; *Cape Colonna*, in ancient Attica; *Cape Emineh*, the eastern extremity of the Balkan mountains, on the shores of the Black Sea, and *Cape Chersonese* and *Cape Takli*, in the Crimea, in the same sea.

Of those in the Baltic, we may mention, *Cape Domesnes*, in the Gulf of Livonia, and *Cape Hangœ-Udde*, in the Gulf of Finland.

PENINSULAS. — From the manner in which the European continent is penetrated by the ocean and its branches, its outline exhibits a number of peninsulas, to which there is no parallel in any other portion of the world. The largest of these is the *Scandinavian Peninsula*, formed by Norway, Sweden, and Lapland. Next follow the three great peninsulas of Southern Europe, namely, the *Hispanian* or *Spanish*, which comprehends Spain, Portugal, and the republic of Andorra; the *Italian*, so remarkable for its odd form, resembling a boot; and the *Slavo-Grecian*, not less remarkable for the number of secondary peninsulas which its outline presents. Of the latter of these, it may be proper to notice the *Peloponnesus* or the *Morea*, so renowned in ancient history, and another, which may be named the *Macedonian*, bounded by the gulfs of Salouiki and Contessa, and which itself is divided into three other peninsulas, those of *Monte Santo*, *Toron*, and *Cassandra*. The other principal European peninsulas are the *Crimea*, in southern Russia; *Kanin*, in the Russian government of Arkhangel; *Jutland*, in the north of Germany; and a peninsula which comprehends the provinces of Holland and Utrecht, in the kingdom of Holland, and which may be named the *Netherlandish*. We may also remark, that the three departments of Finistère, Morbihan, and Côtes-du-Nord, form a large peninsula in the north-west of France. Many other peninsulas might be pointed out; but it would be idle to proceed with the enumeration of these, as they can easily be ascertained by consulting any accurate map of Europe.

RIVERS. — The whole of the rivers of Europe may be divided into six sections, corresponding with the different seas into which their waters flow. We shall here limit our attention to those of which the course is the longest; the others will be noticed in the descriptions of the countries which they traverse.

The Caspian receives the URAL, which separates Europe from Asia; the VOLGA, which traverses the greater portion of European Russia; the KOUMA, which, according to the system proposed by Malte-Brun, and followed by several other geographers, should form part of the boundary line between Europe and Asia; and, finally, the TEREK. All these rivers are Russian.

The Mediterranean, including its branches, receives the DON, which falls into the Sea of Azof; the DNIEPER, DNIESTER, and DANUBE, which enter the Black Sea, (the river last named, and of which the course is only inferior to that of the Volga, having first traversed the whole of Southern Germany, Hungary, and European Turkey); the MARITZA and the VARDAR, rivers of European Turkey, which fall into the Archipelago; and the Po and the ADIGE in Italy, which flow into the Adriatic. The TIBER, which in its limited course bathes only an inconsiderable extent of the Tuscan territory, and a portion of the Papal States; the RHONE, which flows through the south-western portion of Switzerland, and the south-east of France; and the EBRO in Spain, all fall into the western branches of the Mediterranean.

The Atlantic Ocean and its branches receive the GUADALQUIVER, GUADIANA, TAGUS, and DUERO or DOURO, all of which flow through Spain, although the three last named terminate on the coasts of Portugal: the GARONNE, LOIRE, and SEINE, rivers of France, the first two of which fall into the Atlantic, and the last into the English Channel; the SCHELDT, the MEUSE or MAESE, and the RHINE (both of which combine to form the Meuse at its termination), the WESER and the ELBE, all of which fall into the North Sea — the first three after having traversed part of France, the Netherlands, and Germany — and the remaining two after watering a great part of Northern Germany; the GLOMMEN, the largest river of Norway, and the GÖTA or GOTHELBE, from Sweden, the first of which falls into the Skager-Rack, and the latter into the Kattegat; and the THAMES and HUMBER in England, which fall into the North Sea.

The Baltic and its branches receive the DALA, INDALS or RAGUNDA, ANGERMANN, UMEA, and LULEA, from the Norwegiano-Swedish monarchy, and the TORNEA from the latter country and the Russian territory; the NEVA, the DUNA or SOUTHERN DWINA, and the NIEMEN, from Russia; the VISTULA, the course of which is divided between the Austrian empire, the new kingdom of Poland, the republic of Cracow, and the kingdom of Prussia; and the ODER, the course of which is confined almost throughout to Prussia.

The Aretic Frozen Ocean receives the TANA from Finmark in Sweden; the PETCHORA from the Russian government of Arkhangel; and the KARA BAÏGARAMA, which in part separates Europe from Asia.

The White Sea receives the ONEGA, the NORTHERN DWINA or DVINA, and the MEZEN, which flow through a large portion of Northern Russia.

It has been estimated by Malte Brun, that representing all the waters discharged by the rivers of Europe by unity, the Black Sea receives, 0.273; the Caspian, 0.165; the Mediterranean, Sea of Marmora, and Archipelago, 0.144; the Atlantic Ocean, 0.131; the Baltic, 0.129; the North Sea, 0.110; the Artic Frozen Ocean, 0.048. In a preceding portion of our work (*see* p. 66), a Table will be found exhibiting the relative lengths, extent of basins, &c. of the principal European rivers.

LAKES. — A list of the lakes of Europe ought to commence with the *Caspian* in part; but in order not to go at once in the face of opinions sanctioned by custom and supported by weighty authorities, that great expanse of water has been included in our enumeration of the European seas. Of the European lakes (properly so called), the most considerable are those of *Ladoga*, *Saima*, *Pajana*, *Onega*, and *Peïpous* or *Tchoudskoë*, in Russia; and *Wener*, *Wetter*, and *Maler*, in Sweden. Then follow the *Lake of Constance* (Bodensee), between Germany and Switzerland; the *Balaton* or *Plattensee* in Hungary; the *Lac Leman* or *Lake of Geneva*, between Switzerland and Savoy; lakes *Garda* (Lago di Garda) and *Maggiore* (larger), in Northern Italy; and many others which shall be mentioned in the descriptions of the countries in which they are situated.

The following Table exhibits the superficial extent of the principal European lakes: —

	Square Miles.		*Square Miles.*
Ladoga (*Russia*),	6,330	Constance (*Switzerland*),	290
Onega (*Idem*),	3,280	Ilmen (*Russia*),	275
Wener (*Sweden*),	2,136	Lexa (*Idem*),	229
Saimas (*Russian Finland*),	1,602	Ulea (*Russian Finland*),	229
Peïpous (*Russia*),	839	Garda (*Austrian Italy*),	183
Wetter (*Sweden*),	839	Maggiore (*Idem*),	152
Maelar (*Idem*),	763	Tavesthus or Nesi (*Russian Finland*),	152
Enara (*Russian Lapland*),	656	Balaton (*Hungary*),	152
Kuopio (*Russian Finland*),	610	Neuchatel (*Switzerland*),	114
Bielo-Osero (*Russia*),	53	Lake of the Four Cantons (*Idem*),	99
Geneva (*Switzerland*),	336	Zurich (*Idem*),	76

ISLANDS. — In the special descriptions of the countries of Europe, notice shall be taken of the principal islands belonging to each. In the present enumeration we shall confine our attention to the largest, and to those which from their relative situation (the only basis of a sound classification) ought to be considered geographical dependencies of Europe. All the European islands may be arranged in four leading divisions, corresponding with the number of the different seas in which they are found.

1. ISLANDS AND ARCHIPELAGOS* IN THE ATLANTIC OCEAN AND ITS BRANCHES. —

* In reference to *island groups* and *archipelagoes* we shall throughout this work follow Balbi's classification, which is founded on principles which he thus defines: — A *group* is formed by a few islands placed at no great distance from one another, or by a principal island surrounded by several others much smaller in size: an *archipelago* is composed of several islands, which vary in extent, some placed so near as to be seen from each other, and others at greater distances. The very remote or outlying islands connected with a group or an archipelago, are sometimes denominated its *sporades*.

The islands composing the *British Archipelago*, among which are included *Great Britain* and *Ireland*, the two largest islands in Europe, take the lead in this class. Next follow a number of much smaller islands, such as *Vigeroë*, *Hitteren*, &c. on the coast of Norway; the little archipelago of the *Feröe Isles*, belonging to Denmark; *Walcheren*, and the two islands of *North* (Noordc) and *South* (Zuid) *Beveland*, in the Dutch Archipelago; the islands of *Jersey*, *Guernsey*, and *Alderney*, situated between Normandy and Britanny (Bretagne) in France, although political dependencies of Great Britain; the little islands of *Oléron* and *Ré*, opposite the coast of the department of the Lower Charente (Charente-Inférieure), in France; and the Archipelago of the *Açores* or *Azores*, belonging to Portugal, and of which *Terceira* and *St. Michael* are the most important islands.

2. ISLANDS AND ARCHIPELAGOES IN THE MEDITERRANEAN AND ITS BRANCHES. — This division consists of the *Balearic Isles*, of which *Majorca* is the largest; the large islands of *Corsica*, *Sardinia*, and *Sicily*, the little island of *Elba*, and the diminutive group of *Malta*; the *Ionian Isles*, among which *Corfu* and *Cephalonia* are the most remarkable for extent, and *Zante* for importance; *Candia*, one of the largest of the European islands; the numerous islands of the *Grecian Archipelago*, or the *Archipelago* (properly so called) among the European portion of which *Negropont*, *Naxia*, *Andro*, *Lemnos* or *Stalimene*, *Thaso*, &c. &c. are to be remarked for their size, and *Hydra*, *Spezzia*, and *Ægina* for their importance; and finally, on the coast of Dalmatia and in the Adriatic Sea, the islands of *Lissa*, *Brazza*, *Veglia*, *Cherso*, and several others of lesser extent.

3. ISLANDS AND ARCHIPELAGOES IN THE BALTIC. — This class presents first in order the *Danish Archipelago*, in which are found the islands of *Zealand*, *Fyen* or *Funen*, *Falster*, and some others less considerable in extent; then follows *Bornholm*, a dependency of Denmark; *Oland* and *Gottland*, belonging to Sweden; and the Archipelago of the *Aland Isles*, and the islands of *Dago* and *Œsel*, all of which belong to Russia.

4. ISLANDS AND ARCHIPELAGOES IN THE ARCTIC FROZEN OCEAN AND ITS BRANCHES. — This series commences on the west with the *Lofodon-Mageröe* group in the *Norwegian Archipelago*, in which we find the island of *East Waagen* (Ost-Waagen), the central point of the valuable fishery carried on along the coast of Norway; *Hindoen*, the largest island in the group; *Senjen*, and *Mageröe*, the northern point of which is the celebrated North Cape. To the east of these are *Kalgouve Island*, near the entrance to the White Sea; the large group of *Nova Zembla* (Novaya Zemlia, *i. e.* New Land), long believed to be but a single island, but now found to consist of two; and the island of *Waygats* or *Vaigatch*, which forms part of one of the coasts of the strait of the same name. Returning eastward along a higher parallel of latitude, we find *Cherry* or *Baren* (Bear) *Island*, to the north of Finmark; and farther to the north the archipelago of *Spitzbergen*, which from the distance and the westerly direction of the east coast of Greenland, ought certainly to be ranked as a geographical dependency of Europe, although it is commonly attached to America. Russia claims Spitzbergen as a dependency, but its shores are not on this account the less frequented by English, Danish, Hamburgh, Norwegian, and other mariners, who are attracted thither by the abundance of whales, white bears, narwals, and other large mammiferous animals. This archipelago consists of three large islands, and several others inconsiderable in point of size. *Nord-Ostlande* (North-East Land) is the most northern of these islands; on its north coast is the little group of the *Seven Islands* or *Seven Sisters*, which merit attention from the circumstance that they are the most northern land as yet discovered. *Spitzbergen* (properly so called), or as it is denominated in recent charts *New Friesland*, is the largest island in the group; on its western coast is Smeerenburg, a hunting station, established many years ago by a company of Arkhangel merchants, and which may be considered the most northern of the inhabited parts of the globe, although it is occupied only during a portion of the year. *Edges Island*, called also *South-East Island*, is the third in point of size in the Spitzbergen group; the smaller island of *Charles* lies to the west of New Friesland.

MOUNTAINS. — The mountains of Europe may be classified into thirteen systems, of which nine are continental, and four insular. Two of the continental systems, namely, the *Uralian* and *Caucasian*, belong in common to Europe and Asia; but as their ramifications are mostly connected with the latter, they will be described under the head of the Physical Geography of that portion of the world. The other seven are confined wholly within the limits of Europe. Their names are — the *Hesperian*, *Gallo-Franconian*, *Alpine*, *Slavo-Hellenic*, *Slavonic*, *Hercynio-Carpa-*

thian, and *Scandinavian*. The four insular systems are — the *Sardo-Corsican* in the Mediterranean, the *Britannic* and *Açorian* in the Atlantic Ocean, and the *Boreal* in the Arctic Frozen Ocean.

The HESPERIAN SYSTEM is thus denominated, as it comprehends all the mountains and plateaus of ancient Hesperia, now the kingdoms of Spain and Portugal. This system, of which the whole of the mountains of France situate to the south of the Garonne and the Southern Canal, or Canal of Languedoc, are also members, may be divided into three leading groups, named the Southern, Central, and Northern; and these again into several component chains. It must be remarked, however, that the arrangement thus proposed is somewhat arbitrary, as the principal chains in the Spanish peninsula differ alike in aspect and internal structure, and are not members of a great mountain system.

Several geographers, indeed, misled by the fanciful manner in which the mountains are delineated in the older maps of Spain, state that a great chain, called the *Iberian*, extends across the peninsula nearly from north-west to south-east, from which all the other chains are detached as lateral branches. This certainly is the actual direction of the chain which in the following classification is named Celtiberian; but on examining any accurate map it will be found that the mountain ranges and groups of which this chain is composed are but imperfectly connected; and recent measurements prove, that with the exception of the sierras of Occa and Molina, their summits nowhere attain any considerable elevation.

The Southern Group includes all the mountains south of the Tagus and west of the Celtiberian chain. It is subdivided into three chains, which are named in Balbi's work, the Pœni-Betican, Marianic, and Oveto-Herminian — terms derived from the ancient geography of the country. 1. The *Pœni-Betican Chain*, which follows the south coast of Spain throughout the whole extent of the kingdom of Granada, and which contains the highest mountains in the peninsula, is formed by the *Sierra Nevada* on the east, and the *Sierra de Ronda* on the west; its middle connecting links being the *Sierra de los Cabras* or *Loza*, and the *Sierra de Tolox*. Its principal branches detached towards the coast are the heights of *Aljamilla* or *Ujamilla*, a little to the north and east of Cape Gata; the *Sierra de las Alpujarras* (which includes on the east; the *Sierra de Gador*, the *Contraviesa*, and the *Sierra de Lujar*), extending between the Almeria and Guadalfeo rivers; and the heights of *Mijas* and *Bermeja*, a little to the south-west of Malaga. 2. The *Marianic Chain* commences in the south-east of La Mancha, and runs in a south-westerly direction, under the name of the *Sierra d' Alcoraz* at its eastern extremity; *Sierra de Segura* between the intendencies of Murcia and Jaen; *Sierra Morena* in the intendencies of La Mancha, Jaen, and Cordova; and *Sierra d' Aracena* and *Sierra Albaleyra* in that of Seville, where, crossing the Guadiana, it unites with the *Sierra Caldeirao* and *Sierra Monchique* in the kingdom of Algarva. 3. The *Oreto-Herminian Chain*, commonly known by the names — *Mountains of Consuegra*, *Sierra de Yevenenes*, *Mountains of Toledo*, *Sierra de Guadalupe*, and *Sierra de St. Mames*, divides the beds of the Tagus and Guadiana throughout the whole extent of the intendencies of Toledo and Badajoz in Spain, and Alentejo in Portugal.

The Central Group consists of the mountains between the Douro and Tagus; also those ranges which, commencing in the north-west, near the source of the Ebro, stretch in a south-easterly direction as far as Cape Palos. It is subdivided into the two following chains: — 1. The *Carpeto-Vettonic Chain*, which commences in the *Somo-Sierra* and *Guadarrama Mountains*, between Old and New Castile, is continued in the sierras of *Gredos*, *Francia*, and *Gata*, between the intendencies of Salamanca and Badajoz; then stretching into Portugal, includes the *Sierra d' Estrella* in Beira, and terminates in the *Sierra de Cintra* in Portugese Estremadura. 2. The *Celtiberian Chain*, which stretches between the source of the Ebro and Cape Palos, taking successively the names of *Sierra d' Oca*, in the intendency of Burgos; *Sierra de Moncayo*, in the intendencies of Soria and Aragon; *Sierra de Molina* and *Sierra de Albarracin*, in the latter intendency and that of Cuença; and various other names as it extends from the western frontier of the province of Valencia, to the south-eastern extremity of that of Murcia. The mountains in the Balearic Islands may be regarded as dependencies of a detached chain belonging to this group, which terminates in Cape St. Martin in Valencia.

The Northern Group or the Pyrenees constitutes a great chain, which extends from Cape Creuz, on the side of the Mediterranean, to Cape Finisterre on the Atlantic. Following the arrangement recently proposed by Balbi, that portion of the chain which seperates France from Spain, may be named the Gallibcrian Pyrenees. To these succeed the Cantabrian Pyrenees, extending from the Gallibcrians to the sources of the Ebro; the Austurian Pyrenees, between the Cantabrian Mountains and the sources of the Navia; and the Galician Pyrenees, extending from the Navia to Cape Finisterre in Galicia.

Many secondary chains or ridges are detached from the principal chains, and are worthy of notice, particularly those which branch out from the Cantabrian Pyrenees. The most continuous of these ridges is that to the south and east of the Minho and its tributaries, formed by the sierras of *Penamerella*, and *Destredos*, and *Monte Tolano*, in the west of Leon; the sierras of *Segundera*, *Seca*, *St. Mamed*, and *Penagache* in the south of Galicia; the *Sierra d' Estrica*, which separates the Minho and the Lima; and the *Sierra de Catarina* in the south-east of Entre Douro e Minho, in which the range terminates, not far from a portion of the Carpeto-Vettonic chain. Near the sources of the Ebro a little group of eminences forms another connecting link between the great northern and central groups. A third chain, branching out from the southern slopes of the Gallibcrian Pyrenees, extends into Catalonia, and there forms numerous little groups and plateaus.

TABLE OF THE CULMINATING POINTS AND OTHER HEIGHTS IN THE HESPERIAN SYSTEM.

	Feet.
PŒNI-BETICAN CHAIN, OF SIERRA NEVADA,—	
Pichaco de Mulhacen, N. Lat. 37° 6′, W. Long. 3° 10′,	11,657
Pichaco de Veleta, N. Lat. 37° 4′, W. Long. 3° 14′,	11,389
Sierra de Tejada, to the south of Alhama,	7,671
The *Alpujarras* in general,	9,165
Sierra de Gador, N. Lat. 36° 55′, W. Long. 2° 40′,	6,575
Sierra de Lujar, N. Lat. 36° 47′, W. Long. 3° 15′,	6,270
Town of *Ronda*,	3,281
Rock of *Gibraltar*,	1,437
MARIANIC CHAIN,—	
Almuradiel, in the Sierra Morena,	2,438
Puerto de Rey, in the Sierra Morena, to the south of Calzada,	2,274
Sierra d' Aracena,	5,499
The *Foya*, culminating point of the Sierra Monchique, N. Lat. 37° 20′, W. Long. 8° 34′,	4,079
Monte Figo, in the Sierra Caldeirao, N. Lat. 37° 10′, W. Long. 7° 50′,	2,129
ORETO-HERMINIAN CHAIN,—	
Sierra de Guadalupe, on the borders of Toledo and Estremadura,	5,115
Sierra de St. Mames, culminating point near Portalegre,	2,129

	Feet.
CARPETO-VETTONIC CHAIN,—	
Pass of the *Somo-Sierra*, in the NW. of Guadalajara,	4,944
Buytrago, a little to the SW. of the Somo-Sierra, N. Lat. 40° 59′, W. Long. 3° 38′,	3,330
Penalara, a little to the N. of the Escurial,	8,223
Palace of the *Escurial*,	3,264
Sierra de Gredos, N. Lat. 40° 38′, W. Long. 5° 17′,	10,551
Pena de Francia, a little to the SE. of Ciudad-Rodrigo,	5,689
Serra d' Estrella, N. Lat. 40° 19′, W. Long. 9° 57′,	7,524
Serra de Cintra, to the W. of Lisbon,	1,918
CELTIBERIAN CHAIN,—	
Sierra d' Oca, a little to the W. of Burgos,	5,450
Sierra de Moncayo, about 6 miles to the E. of Soria,	4,900 ?
Sierra de Molina, about 7 miles SSE. of the town of that name,	4,500
Mountains in the Balearic Isles,—	
Puig de Torcella, in the N. of Majorca,	4,801
Mount Toro, in Minorca,	4,795
GALLIBERIAN PYRENEES,—	
Southern Face,—	
Maladetta, or *Mont Maudit* (its eastern summit the *Pic de Netou*), in the NE. of Aragon, N. Lat. 42° 38′, E. Long. 0° 47′,	11,426
Glacier of the *Maladetta*,	8,760
Pic Posets, in the NE. of Aragon, N. Lat. 42° 40′, E. Long. 0° 31′,	11,279
Pic de Biedous, in the same group as the preceding, N. Lat. 42° 41′, E. Long. 0° 29′,	10,014
Mont Perdu, on the Spanish frontier, about 10 miles to the N. of Fiseal in Aragon, E. Long. 0° 3′,	11,170
Cylindre du Marboré, to the W. of Mont Perdu, in the same group,	10,050
Central Ridge,—	
Pic Pedrous, on the French frontier, to the E. of the port of Puymoreins, valley of the Arriege, N. Lat. 42° 34′, E. Long. 1° 56′,	9,511
Pic Lanoux, at the head of the valley of the Arriege,	9,370
Pass of *Puymoreins*, valley of the Arriege,	6,299
Pic de Fonte Argente, in the SE. of the department of Arriege, N. Lat. 42° 37′, E. Long. 1° 47′,	9,370
Pic de Serrere, at the head of the valley of the Arriege,	9,646
Peak of the *Port* (or Pass) *de Siguier*, in the same group, N. Lat. 42° 39′,	9,613
Port (or Pass) *de Rat*, at the head of the valley of the Vic de Sos, in Arriege, N. Lat. 42° 38′, E. Long. 1° 35′,	7,473
Montcalm or *Montcal*, at the head of the same valley, on the French and Spanish frontiers, N. Lat. 42° 41′, E. Long. 1° 30′,	10,663
Pic d' Estats, in the same group, N. Lat. 42° 40′, E. Long. 1° 28′,	10,611
Montvallier, at the head of the valley of the Sallat, Arriege, N. Lat. 42° 46′, E. Long. 1° 6′,	9,249
Montoulton or *Tuque de Mauberme*,* on the French and Spanish frontiers, to the SW. of Castillon, in Arriege, N. Lat. 42° 40′, E. Long. 0° 59′,	9,492
Pic de Rious, to the S. of the valley of Aran, in the NW. of Catalonia,	9,620
Port de Viella, in the NW. of Catalonia,	8,222
Port de Picade, at the head of the valley of Luchon, Upper Garonne,	7,950
Port de Vanasque, in the NE. of Aragon,	7,917
Passes of *Glere*, *Oo* (at the head of the valley of Larboust), *Clarabide* (at the head of the valley of Louron), *Lapez*, *Plau* (at the head of the valley of Riomajou), *Viel* (between the valley of Cinea and that of Estaubé), *Pinède* and *Brèche de Roland*, all of them situated to the W. of the pass of Vanasque, and to the E. of that of Gavarnie, (*which see*)—average height,	8,660
Carabioules, at the head of the valley of Lys, N. Lat. 42° 42′, E. Long. 0° 37′ ?	10,545
Tuque de Maoupas, in the same valley,	10,325
Pic de Fourcanade, N. Lat. 42° 40′, E. Long. 0° 49′ ?	10,030
Pic de Baroudes, head of the valley of the Aure, in the SE. of the department of the Upper Pyrenees,	9,787
Troumouse, in the same group, N. Lat. 42° 43′, E. Long. 0° 13′ ?	10,496
Pic de Cascade,	10,745
Tour du Marboré, on the French frontier to the S. of Luz, Upper Pyrenees,	9,964
Le Taillon,	10,214
Port de Gavarnie, SSW. from Luz, Upper Pyrenees,	7,654
Vignemalle, to the S. of Cauteret, in the SW. of the Upper Pyrenees,	11,001
Pic de Badescure,	10,325
Pic du Midi d' Osau, or *Arrieu Grande*, at the SE. extremity of the department of the Lower Pyrenees,	9,406
Soube, another summit in the same group,	10,276
Port de Canfranc, S. of the Pic du Midi,	6,713
Pic de Anie, or *Mont Anialana* or *Billari*, on the French frontier, SSW. from Oleron,	8,478
Mont Hory, to the N. of Roncal, in the NE. of Navarre,	6,591
Summit of *Ahady*, source of the Nive,	4,790
Port de Roncevaux (Roncevallos), to the S. of St. Jean Pied de Port, in the Upper Pyrenees, and to the NE. of Pampeluna, in Navarre,	5,771
Port d' Arraiz,	4,347
Northern Face,—	
Mont Canigou, to the W. of Ceret and S. of Prades, department of the Eastern Pyrenees, N. Lat. 42° 31′, E. Long. 2° 25′,	9,144
Le Trezevent,	7,590
Le Pastor de Canigou } in the same group, {	5,952
Town of *Mont Louis*,	5,240
Roc Blanc, source of the Aude, in the SW. of the department of the Eastern Pyrences,	8,320
Mont Mousset, N. Lat. 42° 40′, E. Long. 2° 20′ ?	7,901
Pic d' Endron, N. Lat. 42° 43′, E. Long. 1° 28′ ?	6,733
Mont Carbere, in the W. of the department of Arriege,	8,655
Lake of *Toro de Viella*, } to the SW. of Bagneres de Luchon, {	6,611
Lake of the Port de Vanasque, }	7,271

* *Tuque* or *tuc*, in the *patois* of the country, signifies peak or summit.

	Feet.
GALLIBERIAN PYRENEES,—*Northern Face* (continued) —	
Pic Quairat, N. Lat. 42° 43′, W. Long. 0° 37′,	9,964
Pic du Hermittans,	9,932
Frozen Lake at *Port d' Oo*,	8,806
Pic d' Arbizon, valley of the Aure to the W. of Arreau, department of the Upper Pyrenees,	9,544
Cirque de Troumouse,	6,778
Brèche de Tuque-rouge,	9,528
Pic d' Aiguillon, (in the same group as the preceding)	9,685
Pic Long,	10,584
Pic de Neouvielle,	10,145
Pic Cambielle,	10,611
Pic du Midi de Bigorre, a little to the S. of Bagneres de Bigorre,	9,592
The Cascade of Gavarnie,	7,648
Mountains of Catalonia,—	
Monserrat, about 32 miles NW. of Barcelona,	4,054
CANTABRIAN PYRENEES,—	
Sierra d' Aralar, in the SE. of Gnipuzcoa,	7,098
ASTURIAN PYRENEES,—	
Sierra de Sejos, on the frontiers of Santander and Palencia,	5,700
Sierra Alba, in the SW. of Santander,	6,960
Le Pena de Penaranda, the source of the Sil, in the NW. of Leon,	10,998
Sierra de Penamarella, in Galicia, at the junction of that province with Leon and Asturias,	9,464
Le Pena Trevinca,	9,591
Secondary Chains in the South,—	
Sierra de St. Mamed, source of the Lima and Tamega, in the S. of Galicia,	7,716
Gaviara, in the NE. of Entre Douro e Minho, in Portugal,	7,886

GALLO-FRANCIAN SYSTEM.—Under this designation, as a collective name, it is proposed to include all the mountains of France which are situate to the north of the Garonne and the Languedoc Canal; and to the west of the Rhone (below Lyons), of the Soâne (below Châlons), of the Doubs (below the neighbourhood of Montbéliard), and of the Rhine (below Bâle). In this system there is no appearance of a continuous principal chain, but it rather consists of a series of small plateaus surmounted by mountains, or more frequently by mere hilly eminences. The range, which seems most to take a uniform direction from south-west to north-east, may be named the Ceveno-Vosgian Chain. That portion of it called the Cévennes,* assumes the names of *Black Mountains* in the departments of the Aude and the Herault; *Mountains of the Espinouse* between the departments of the Tarn and the Aveyron on the west, and that of the Herault on the east; *Garrigues*, in the Aveyron and the Gard; the *Gévaudan* or *Cevennes* (properly so called), in the Lozère; *Mountains of the Vivaraise*, in the Ardèche; the *Lyonnaise Mountains*, in the Rhone; and the *Charolais* and *Maconnaise Mountains*, in Saône-et-Loire. The heights of the *Côte-d' Or*, in the department of that name; the *Plateau of Langres*, in the Haute (or Upper) Marne; and the *Faucille Mountains*, in the department of the Vosges, form the connecting link between the northern elevations belonging to the Cévennes and the Chain of the Vosges, a ridge which separates the ancient province of Alsace from that of Lorraine, and stretches northward into the Bavarian circle of the Rhine.

Many ranges, mostly of no great length, although in a few instances so far prolonged as to justify the designation of chains, diverge laterally from the western slope of the line of heights which has been pointed out in the preceding paragraph as the leading series. In this respect, it is to be observed that the Ceveno-Vosgian Chain, from its uniform direction, length, and a number of other circumstances which do not admit of being briefly detailed, merits the distinction thus claimed for it, although the most elevated summit in the system of which it forms a part are found in the mountains of Auvergne and those of Forez. Our notice of the lateral branches must be confined to those which are the most important. One branch, called the *Levezon*, stretches south-west from Mont Lozere in the Cévennes; while from nearly the same point the *Mountains of Aubrec* extend towards the north-west. In the same direction the Mountains of Margeride are prolonged to their union with the Mountains of Anvergne, in the departments of the Cantal and the Puy-de-Dôme. To the west of the huge basaltic mass which forms the Monts-Dores, in the Auvergne Mountains, several detached heights extend westward into the departments of the Corrèze, Creuse, Upper-Vienne, Charente, and the Deux-Sèvres. In one part these eminences form a long but not very elevated series of ridges, which terminates near the mouth of the Loire; its highest points are Mont Olouze, Mont Jurgean, and the *Gatine Mountains;* the last of which separates the northern portions of the departments of the Deux-Sèvres and Vendée.

To the south of Puy, the Mountains of the Vivaraise send off another chain, which, under the name of Mountains of Forez, traverse the departments of the Upper-Loire, and those of the Puy-de-Dôme and the Loire.

A series of heights sets out from the eastern extremity of the Plateau of Langres, and, under various designations, is extended into the departments of the Meuse, Ardennes, and the Moselle, in France; the Grand-duchy of Luxemburg and the provinces of Namur and Hainaut in Belgium, and into the western portion of the kingdom of Prussia. The French and Belgian portion of these heights may be named the Ardennes. The others, which we shall notice at present, are the Hundsrück or Back of the Dog, in the Prussian governments of Coblentz and Treves; the volcanic hills which form the Eifel Gebirge (or chain), in the governments of Coblentz, Aix-la-Chapelle, and Treves; and the marshy ridge of the Hoch-Veen, in that of Aix-la-Chapelle.

The chain, for the most part granitic, which runs through the departments of Eure-et-Loire, Orne, Manche, Ile-et-Vilaine, Côtes-du-Nord, Morbihan, and Finistère is only, properly speaking, a range of little hills, in common usage dignified by the designation of Mountains, and which erroneously has been regarded as a branch of the Cévennes, although the two ridges are separated by extensive plains. This range is named by Malte-Brun the Armorican Chain, and it forms, according to his classification, the second of the two great divisions which compose the mountain system of France, or the Franco-Celtic group, the first division being, as in the classification we have adopted, the Ceveno-Vosgian Chain. The Armorican Chain, consisting of four great divisions, which extend in different directions, commences on the western coast in that portion of ancient Brittany which now forms the department of Finistère. Here it divides into two branches, called the *Arree* and *Black Mountains*, the former situate to the north of the Aulne, and the latter to the south of that river. The heights of *Menez* extend eastward through the department of the Côtes-du-Nord; and a range of hills, commencing near the Vilaine, runs towards the south, and but for the course of the Loire, would unite

* A ridge that separates the waters that run towards the Atlantic Ocean from those that flow into the Mediterranean.

with a portion of the Ceveno-Vosgian Chain. The northern extremity of one branch forms Cape La Hogue; another on the east stretches to the heights of *Beauce*, in the department of Eure-et-Loir.

TABLE OF THE CULMINATING POINTS AND OTHER HEIGHTS IN THE GALLO-FRANCIAN SYSTEM.

	Feet.
CEVENNES.	
Black Mountains,—	
Pic Montant,	3,415
Cèvennes Proper,—	
Mont Lozere, in the department of that name, N. Lat. 44° 45′, E. Long. 3° 50′	4,884
Source of the *Allier*,	4,669
Mont Marguerite,	4,994
Mountains of the Vivaraise,—	
Source of the *Loire*, in Mont Gerbier Jones,	4,593
Mont Gerbier Jones, N. Lat. 44° 45′, E. Long. 4° 15′,	5,125
Mont Mezenc, N. Lat. 44° 54′, E. Long. 4° 10′ (?)	5,819
Mountains of the Lyonnaise,—	
Mont Pilat, a little to the S. E. of St. Etienne, department of the Loire,	3,516
Mont Tarare, fifteen miles WNW. of Lyons,	4,755
Charolaise Mountains,—Culminating Point,	2,557
Mâconnaise Mountains,—Culminating Point,	2,129
Lateral Chains to the West of the Principal Chain.—	
Mountains of Margeride,—	
Mont Boissier,	4,923
Montagne de Folletin, N. Lat. 44° 46′, E. Long. 3° 54′,	4,488
Town of Pradelles, in the department of the Upper Loire,	3,722
Mountains of Auvergne,—	
Plomb de Cantal, 10 miles WSW. of Murat,	6,093
Puy-Mary, volcanic Peak, to the NW. of the Plomb,	6,113
Puy de Sancy, summit of the Monts-Dores, a little to the W. of Besse, in the SW. of the department of Puy de Dôme,	6221
Puy de Dôme, about 10 miles W. of Clermont,	4,846
Puy de l'Angle,	5,748
Puy de Mareilh,	5,161
Puy de la Haute Chaux,	5 627
Puy de Tribou,	5,591
Forez Mountains,—	
Pierre-sur-Haute,	5,435
CHAIN OF THE VOSGES,—	
Tasselot, culminating point of *Mont Côte d' Or*,	1,962
Source of the *Seine*, near Chanceaux, department of Côte d'Or,	1,427
Mont Afrique, culminating point of the Plateau of Langres,	1,873
Les Fourches, the highest point in the Faucille Mountains,	1,610
Ballon de Lure, in the department of the Upper Saône,	3,721
Source of the *Oignon*, in the same department, and to the NE. of Lure,	2,276
Ballon d' Alsace, at the SW. extremity of the department of the Vosges, N. Lat. 47° 49′, E. Long. 6° 52′,	4,124
Bœhrenkopf, N. Lat. 47° 47′, E. Long. 6° 54′,	3,064
Ballon de Guebwiller, or *Sultz*, in the department of the Upper Rhine, N. Lat. 47° 54′, E. Long. 7° 6′,	4,693
Source of the Saône, in the department of the Vosges,	1,299
Source of the *Moselle*, between Bassan and Orbé, department of the Upper Rhine,	2,379
Le Grand Donnon, at the SE. extremity of the department of the Meurth, N. Lat. 48° 31′, E. Long. 7° 10′,	3,314
Source of the *Surre*, at the foot of the Great Donnon,	1,765
Mont Tonnere, or the *Donnersberg*, in the Palatinate of Bavaria, N. Lat. 49° 37′, E. Long. 7° 56′,	2,225
The *Ardennes* in general,	1,800
The *Eifel* or *Eyffel Gebirge*,	1,694
Heights of the *Hoch-Veen*,	2,291?
The *Seine*, at Paris,	111
Observatoire de Paris (1er étage),	240
ARMORICAN CHAIN,—Culminating Point,*	1,280
Heights of *Arree*,	995
Black Mountains,	818

ALPINE SYSTEM; or SYSTEM OF THE ALPS (properly so called).—This system, with which geographers in general for long connected all the mountains of continental Europe, and in which many of them still include those which we have grouped into the systems named the *Gallo-Francian*, *Hercynio*, *Carpathian*, and *Slavo-Hellenic*, will, according to our arrangement, comprehend only the mountains situate to the east of the Rhône and Doubs, to the right of the Danube, and to the west of the Unna, a tributary of the Save. By combining to the utmost possible extent, the divisions and designations which are generally recognised, with the facts collected by travellers and by numerous authors who have made the Alps the subject of their writings, we think that this great system may be described in the following manner:—

It consists of a *Principal Chain*, which several times changes its direction, and takes the following names:—1. *Maritime or Ligurian Alps*, from the Col (or Pass) de Tende,† as far as Mont Viso;

* The situation of this point is not stated in Balbi's Table.

† It is sometimes advanced that the Maritime Alps commence at the Litimbro, a mountain torrent which falls into the Gulf of Genoa, to the west of Savona. This opinion has been sanctioned by Napoleon in his campaigns; by M. Bruguière in his learned Orography of Europe, and for some years past has been held by the whole body of French geographers. As, however, the inhabitants of the country apply the name *Apennines*, and not Alps, to the mountains situate to the east of the Col de Tende, we are induced to adopt the ancient commencement, the more so that the lesser height of these mountains, and the identity of their features, sufficiently indicate that this portion of the chain belongs really to the Apennines, and not to the Alps.—*Balbi*.

this portion of the chain proceeds first from east to west, and afterwards from south to north, forming the northern boundary of the province of Nice, and then separates Provence in France from the Sardinian province of Cuneo: 2. *Cottian Alps*, from Mont Viso as far as Mont Cenis, between the province of Turin on one side, and the department of the Upper Alps in France, and Savoy in Sardinia, on the other: 3. *Graian or Grecian Alps*, from Mont Cenis as far as the Col du Bonhomme, between the provinces of Turin and Aosta on the east, and Savoy on the west: 4. *Pennine Alps*, from the Col du Bonhomme, as far as Mont Rosa, between the Sardinian provinces of Aosta and Novarra on the one side, and Savoy and the Valais in Switzerland on the other: 5. *Lepontine or Helvetian Alps*, from Mont Rosa as far as Mont Bernardin, between the province of Novarra and the canton of Tessin, on one side, and the cantons of the Valais, Uri, and the Grisons, on the other: 6. *Rhætian Alps*, from Mont Bernardin as far as the Drey-Herren-Spitz (Three Lord's Point or Peak), between the Valtelline and Southern Tyrol, on one side, and the Grissons and Northern Tyrol, on the other: 7. *Noric Alps*, from the Drey-Herren-Spitz as far as the neighbourhood of Vienna, stretching through Salzburg, Styria, and Upper and Lower Austria; *Schneeberg* in Lower Austria, and the *Semering*, on its southern border, are the culminating points of this extreme portion of the principal chain. On the north, the *Khalenberg*, situate also in Lower Austria, extends towards the Danube, gradually diminishing in elevation till it is lost in the plain of Vienna. A southern branch commences at Semering, near the source of the Raab, and following the course of that river into Hungary, terminates in the hills of the *Bakonier-Wald*, between the Danube and Lake Balaton.

Among the numerous ranges or chains which are detached from the principal chain, the following alone merit (from their importance) to be noticed in this place: —

In the neighbourhood of Mont St. Gothard, in that portion of the principal chain called the Lepontine or Helvetian Alps, three branches are detached from the main ridge, which soon subdividing into several others, extend over the whole face of Switzerland. The most elevated of these is the chain of the *Bernese Alps* (or as it is designated by M. Bruguiere, the Northern Chain, in opposition to that which forms part of the principal chain, and of which the relative position is southern), proceeds towards the west, and separates the Valais from the canton of Berne. Another branch proceeds northward between the cantons of Berne and Uri, and extends into those of Unterwald and Lucerne. The third principal branch separates the Four Cantons from the Grisons, and extends in several ridges to the Lake of Constance. The ridge of the Jorat, on the north side of the Lake of Geneva, which forms a connecting link between the principal chain of the Alps and the Jura mountains, may be considered a prolongation of the Bernese chain. The Jura Mountains consist of several ranges parallel to one another, of which the most eastern, which is also the most elevated, extends from the bend or elbow described by the Rhone, in the east of the department of the Ain, to the confluence of the Aare and Rhine.

Near Mont d'Oro in the Rhætian Alps a branch sets out from the main ridge, and after separating the upper valleys of the Rhine and Inn, crosses the Vorarlberg. In this portion of the Austrian empire, the branch in question, which we propose to name the Vorarlberg Chain, separates into two ridges, one of which, proceeding westward to the south of the Danube, penetrates into Swabia, and approaches the heights of the Swartz-Wald or Black Forest, the western extremity of the Hercynio-Carpathian system; the other, the heights of which in one part are called *Algau*, stretches into southern Bavaria, and separates the upper valley of the Inn from that of the Iser.

To the south of the Drey-Herren-Spitz, in the western portion of the Noric Alps, a ridge is detached, which running south separates the valley of the Rienz, a tributary of the Adige, from that of the Drave, a tributary of the Danube, and unites with the Carnic Alps or *Birnbaumer-Wald* of the Germans, a range which, according to M. Bruguière, extends from the source of the Brenta to Villach on the Drave, separating Tyrol and Upper Carinthia from the provinces forming the government of Venice. The chain of the Carnic Alps is prolonged to the south-east under the designation of Julian or Pannonian Alps. This last-named chain separates into two branches a little to the south-east of Tarvis, near the source of the Save. The *Northern Branch* separates the tributary streams of the Save from those of the Drave, stretches through southern Styria, civil Croatia, and entering Sclavonia, disappears in the plains of that province; the *Southern Branch* traverses the kingdom of Illyria, and subdividing into several ridges, terminates in one direction on the west coast of Istria, in another on the coast of the Gulf of Carnero, and farther to the east it is lost in the little eminences which form the point of junction between the Alpine and Slavo-Hellenic systems.

The great chain of the Apennines commences to the east of Savona, at the south-east extremity of the Maritime Alps, and stretches without interruption to the Straits of Messina, beyond which it is prolonged in the mountains of Sicily. It has recently been proposed to divide this chain into four portions — northern, central, southern, and insular. 1. *Northern Apennines.* — This portion of the chain extends from the Col de Tende as far as the valley which leads from Arezzo to St. Angelo — its course is from west to east, leaving to the north the Sardinian provinces of Cuneo and Alessandria, the duchies of Parma and Modena, and the Papal provinces of Bologna, Ravenna, Forli, and Urbino; and to the south, the Sardinian province of Genoa, the duchies of Massa and Lucca, and the grand-duchy of Tuscany. 2. *Central Apennines.* — These extend from the southern extremity of the preceding chain as far as the valley of Pescara, their course being from north-west to south-east, passing through the Pontifical State, where they divide the waters in the basin of the Tiber from those that flow into the Adriatic, and afterwards separate the Neapolitan provinces of Abruzzo Ultra and Abruzzo Citra. 3. *Southern Apennines*, extending from the valley of Pescara to Cape Spartivento; the principal branch of this portion of the chain traverses the kingdom of Naples, separating in its course the waters which flow into the Mediterranean from those which are received by the Adriatic and the Ionian Sea. Mount Vesuvius may be considered a dependency of this range. 4. *Insular* or *Sicilian Apennines*, comprehending the mountains of Sicily. These continue the Apennine chain by three ridges, which setting out in different directions from the neighbourhood of the Pizzo di Case or Mount Modonia, terminate respectively in Cape Rasocolmo on the north-east, Cape San Vito on the north-west, and Cape Passaro on the south.

TABLE OF THE CULMINATING POINTS AND OTHER HEIGHTS IN THE ALPINE SYSTEM.

	Feet.
Principal Chain, —	
Maritime Alps, —	
Col de Tende, to the S. of Cuneo. N. Lat. 44° 8′, E. Long 7° 30′,	5,889
Col de Roburent, a little to the SE. of Barcelonnette, N. Lat. 44° 24′, E. Long. 7° 6′,	9,718
Town of *Barcelonnette*, in the NE. of the department of the Lower Alps,	3,707
Mines of *St. Ours*, near Barcelonnette,	7,087
Mont Parpaillou, near Barcelonnette,	8,931
Mont de Lans, SE. of Barcelonnette,	4,263
Pass of *Mont de Lans*,	3,862
Col de Maurin, to the SE. of Embrun, in the department of the Upper Alps, N. Lat. 44° 30′, E. Long. 6° 47′,	9,784
Village of *Maurin*,	6,240

	Feet.
PRINCIPAL CHAIN,—Maritime Alps (continued)—	
Peak to the W. of Maurin,	13,107
Monte Pelvo, to the S. of Mont Viso, N. Lat. 44° 30′, E. Long. 6° 58′,	9,958
Town of *Gap*, department of the Upper Alps,	2,424
Mont Ventoux, a little to the NE. of Carpentras, department of the Vaucluse,	6.427
Observatory of *Turin*,	915
Cottian Alps,—	
Col dell' Agnello, between the Val Vraita, in Piedmont, and the valley of the Guil, department of the Upper Alps,	10,646
Mont Viso, N. Lat. 44° 40′, E. Long. 7° 5′,	12,586
Mont Olan, to the NE. of the valley of Godemard, N. Lat. 44° 50′,	13,831
Village of *St. Veran*, to the SE. of Fort Queiras, department of the Upper Alps,	6,698
Pic du Chevalier, *Pic de Pelladone*, W. of Mont Viso,	10,302 / 8,606
Mont Pelvoux de Valouise, to the SW. of Briançon,	13,440
Town of *Briançon*,	4,285
Mont Genèvre, to the E. of Briançon,	11,785
Pass of Mont Genèvre,	6,476
Mont Galeon de la Grave, near the source of the Romanche, to the N. of Briançon,	12,467
Grecian Alps,—	
Mont Cenis (Rock of St. Michael), N. Lat. 45° 14′, E. Long. 6° 45′,	11,460
Pass of Mont Cenis,	6,775
Lake of Mont Cenis,	6,280
Post-house on Mont Cenis,	6,453
Village of *Lans-le-bourg*, at the foot of Mont Cenis, to the N.,	4,554
Rocca Melone, W. of Mont Cenis, N. Lat. 45° 12′, E. Long. 7° 4′,	11,569
Aiguille de la Sassière, N. Lat. 45° 30′, E. Long. 6° 59′,	12,346
Mont Iseran, source of the Issère, N. Lat. 45° 31′, E. Long. 7° 16′,	13,274
Mont Valaisan,	10,932
Pass of the *Little St. Bernard* (at the Hospice), N. Lat. 45° 43′,	7,192
The *Little St. Bernard*,	9,591
Pennine Alps,—	
Col du Bonhomme, N. Lat. 45° 44′, E. Long. 6° 40′,	8,025
Col de la Seigne, E. of the Col du Bonhomme,	8,078
Mont Blanc (the highest mountain in continental Europe), N. Lat. 45° 50′, E. Long. 6° 52′,	15,730*
Le Géant, a little to the NE. of Mont Blanc,	13 800
Col du Géant,	11,172
Aiguille du Midi, to the N. of Mont Blanc,	12,743
Aiguille du Dru, N. Lat. 45° 57′, E. Long. 6° 49′,	12,445
Aiguille d' Argentière, N. Lat. 45° 56′, E. Long. 6° 58′,	12,163
Dent de Midi, N. Lat. 46° 10′, E. Long. 6° 54′,	10,449
Priory of Chamouni,	3,346
Col de Ferret, E. of the group of Mont Blanc and W. of that of the Great St. Bernard,	7,641
Hospice of the Great St. Bernard,	7,962
Mont Velan (a peak of the *Great St. Bernard*), N. Lat. 45° 53′, E. Long. 7° 15′,	11,063
Mont Combin, N. Lat. 45° 56′, E. Long. 7° 19′,	14,125
Mont Cervin, or *Matterhorn*, to the E. of Mont Combin, E. Long. 7° 43′,	14,837
Pass of Mont Cervin (to the E. of the mountain),	11,106
Monte Rosa, N. Lat. 45° 56′, E. Long. 7° 52′,	15,152
Pic Blanc, on the east flank of Monte Rosa,	11,190
Lepontine Alps,—	
Pass of the *Simplon*, N. Lat. 46° 14′, E. Long. 8° 2′,	6,578
Monte Leon or the *Simplon*, to the N. and E. of the Pass,	11,541
Mont Furka, 10 miles W. of St. Gothard,	14,037
Mont Fieuda, in the group of St. Gothard, and to the W. of the Pass,	10,178
Pass of *St. Gothard*, at the Hospice, N. Lat. 46° 35′, E. Long. 8° 32′,	6,808
St. Gothard, *Pesciora*, highest summit in the group,	10,595
St. Gothard, *Pettina*, another summit,	9,152
Moschelhorn, *Vogelsberg*, or *Piz Valrhein*, in the Rheinwald, N. Lat. 46° 29′, E. Long. 9° 2′,	10,870
Monte Cridone, a little to the W. of the northern portion of Lago Maggiore,	7,086
Monte Camoghe, 10 miles N. of Lago di Lugano,	9,315
Monte Giori, a little to the E. of Monte Camoghe,	7,020
Lago Maggiore,	678
Rhætian Alps,—	
Mont Bernardine, or *Bernhardine*, S. of the Rheinwald, N. Lat. 46° 30′, E. Long. 9° 10′,	10,135
Pass of *Bernardino*, on the E. side of the Bernardin,	7,115
Pass of the *Splügen*, N. Lat. 46° 29′, E. Long. 9° 20′,	6,814
Splügen, on the E. side of the Pass,	9,981
Village of *Splügen*, at the N. foot of the mountain,	4,711
Soglio, (the highest village in Europe); in the S. of the Grisons, 8 miles W.S.W. of the Pass of Maloya,	6,714
Pizzo di Stella, to the N. of the village of Splügen,	10,676
Pass of *Maloya*, leading from the Val Bregaglia, to the upper valley of the Inn, N. Lat. 46° 24′, E. Long. 9° 41′,	?
Monte Maloya,	11,483
Mont Septimer, on the N.W. side of the Silser-See, or Sylva-plana Lake, source of the Inn,	9,592
The *Silser-See* (Lake),	5,754
Mont Julier, (*Err* its highest summit), a little to the E. of the Septimer, and N. of the source of the Inn,	13,855 ?
Pass of *Mont Julier*,	8,134
Monte dell' Oro, S. of the Septimer and Julier, N. Lat. 46° 25′, E. Long. 9° 42′,	10,538
Monte Disorazzie or *Della Disgrazie*, a little to the S. of Monte dell' Oro,	12,060

* According to another authority, 15,646 feet.

	Feet.
PRINCIPAL CHAIN,—Rhætian Alps (continued)—	
Pizzo d'Ambria, near Sondrio,	9,561
Monte Gavio, 11 miles SE. of Bormio or Worms,	11,754
Monte Confinale, a little to the N. and E. of Monte Gavio,	11,070
Pass, a little to the S. of Nauders, (N. Lat. 46° 54′, E. Long. 10° 32′), in the new Austrian road to Milan, by the Valteline,	4,400
Another pass in the same road, across the ridge of *Monte Stelvio*, a secondary range, a little way down the valley of the Adige; being the highest carriage road in Europe,	9,174
Ortler Spitz, N. Lat. 46° 28′, E. Long. 10° 32′,	12,852
Monte Braulio, 8 miles N. of Bormio,	9,777
Monte Adamello, 10 miles W. of Trent,	11,075
Mont Oetzhaler, about 25 miles NE. of the Ortler-Spitz,	10,434
Mont Gehatsch, (the *Zebru* or *Kœnigs-spitz?*) to the NW. of the preceding, in the same group,	12,276
Platey Kogel, summit in the same group,	10,391
Stuben-Ferner, a little to the NE. of Monts Oetzhaler and Gehatsch,	10,204
Hoch-eider Spitz (*Grosser Bock*), between Mont Stuben and the river Inn,	9,157
Town of *Innsbruck*,	1,857
The *Brenner*, about 20 miles SE. of Innsbruck,	6,788
Pass of the *Brenner*, to the W. of the mountain,	4,660
Labach-Spitz, NW. of Bruneeken,	10,128
Town of *Brixen*,	1,955
Drey-Herren Spitz (Peak of the *Three Lords*), N. Lat. 47° 5′, E. Long. 12° 15′,	10,122
Noric Alps,—	
The *Gross Glockner* (Big Bell), N. Lat. 47° 7′, E. Long. 12° 43′,	12,776
Bad Gastein (Baths), N. of the *Rathansberg*, N. Lat. 47° 5′, E. Long. 13° 6′,	3,137
Höhenwart, }	11,075
Wisbach Horn, } in the N. of Carinthia,	11,518
Gross Kogel, }	9,718
Pass of *Tauerne*, on the high road from Venice to Salzburg, N. Lat. 47° 19′, E. Long. 13° 31′,	5,413
Radstadter Tauerne,	8,588
Höhe Thron, in the Tænen Gebirge (Mount Tanen), 20 miles WSW. from Salzburg,	7,720
Thorstein, }	9,630
Kappenkarstein, } in Upper Austria,	8,075
Kalmberg, }	5,924
Winfeld Peaks, }	8,581
Höhe Gailing or *Golling*, } in Styria and Lower Austria,	6,203
Schneeberg, }	6,950
Pass of *Semmering*, 30 miles NE. of Bruck,	3,325
Culminating point of the Bakonier Wald, N. of Veszprim,	2,378
NORTHERN CHAIN, or BERNESE ALPS,—	
Chain between the Valais and Berne,—	
Pass of the *Grimsel*, N. Lat. 46° 33′, E. Long. 8° 20′,	8,400
Grimselberg,	9,703
Finster-Aar-Horn (Dark Peak of the Aar), 11 miles W. of Grimsel Pass,	14,106
Schreckhorn, 5 miles N. of Finster-Aar-Horn,	13,386
Wetterhorn, 5 miles N. of the Schrekhorn,	12,210
Grindelwalder-Verscher-Horner, NW. of Finster-Aar-Horn, E. Long. 8° 3′,	13,321
Eiger, 5 miles W. of the Schrekhorn,	13,075
Le Monch (Monk), between Mont Eiger and the Jung Frau,	13,498
Jung Frau (Virgin), N. Lat. 46° 32′, E. Long. 7° 57′,	13,718
Tschingelhorn, SW. of the Jung Frau, N. Lat. 46° 29′, E. Long. 7° 50′,	11,700
Gespaltenehorn, N. Lat. 46° 30′, E. Long. 7° 48′,	11,588
Blümlis-Alpe, or Wilde Frau, N. Lat. 46° 29′, E. Long. 7° 45′,	12,140
Zukhorn, N. Lat. 46° 27′, E. Long. 7° 46′,	12,150
Doldenhorn, N. Lat. 46° 28′, E. Long. 7° 44′,	12,021
Balme-Horn, N. Lat. 46° 26′, E. Long. 7° 43′,	12,176
Alte-els Horn, N. Lat. 46° 24′, E. Long. 7° 42′,	12,182
Rinderhorn, N. Lat. 46° 26′, E. Long. 7° 39′,	11,680
Lammernhorn, N. Lat. 46° 23′, E. Long. 7° 34′,	9,994
Stroubel, N. Lat. 46° 23′, E. Long. 7° 30′,	10,978
Road over the ridge of the *Gemmi* or *Daube*, S. of Alte-els Horn and Stroubel,	6,985
Oldenhorn, at the SW. point of the Canton of Berne, N. Lat. 46° 20′, E. Long. 7° 13′,	10,191
Les Diablerets, between the Valais and the Canton of Berne, N. Lat. 46° 18′, E. Long. 7° 11′,	10,620
Dent de Morcle, N. Lat. 46° 12′, E. Long. 7° 5′,	9,758
Mont Pelerin, or *Dent de Jaman* (culminating point of the Jorat), on the borders of the Canton of Fribourg, to the E. of Vevey,	4,085
Highest point of the route from Lausanne to Berne,	3,038
Lake of *Geneva*,*	1,152
Lake of *Thun*,	1,896
Lake of *Brienz*,	1,900
Niesen (*Mont*), S. of the Lake of Thun, at the opening of the valleys of Simmen and Kander,	7,340
Stockhorn, to the W. of the Niesen,	6,760
Chain extending from the Group of St. Gothard to the Lake of Lucerne,—	
Gallenstock, N. of Furka Pass, N. Lat. 46° 37′, E. Long. 8° 25′,	12,481
Glacier in which the *Rhône* has its source, on the S. flank of the Gallenstock, and W. of Mont Furka,	5,469
Süstenhorn, 5 miles NNE. of the Gallenstock,	11,627
Spitzli, summit in the same group,	11,387
Steinenberg, N. Lat. 46° 44′, E. Long. 8° 26′,	9,892
Tittis, 11 miles NNE. of the Gallenstock,	11,414
Schlossberg, N. Lat. 46° 48′, E. Long. 8° 33′,	10,407
Wallenstock, 6 miles NW. of Mont Titlis,	8,611
Urner-Rothstock, 6 miles W. of Altorf,	9,300

* Greatest depth of the Lake, 906 feet.

NORTHERN CHAIN, or BERNESE ALPS,—

	Feet.
Chain extending from the Group of St. Gothard to the Lake of Lucerne (continued.)	
Wendi, or *Gadmerstock*, near the lake of *Engstlen*,	10,132
Schœn Alpe, Bloum Alpe, or *Stanzerhorn*, S. of Stanz, Unterwalden,	6,517
Pilate, 8 miles SW. of Lucerne,	7,080
Lake of *Lucerne*,	1,406
Hochgant, 8 miles NNE. of Untersen,	7,257
Chain or Series of Ridges extending from the Group of St. Gothard to the Lakes of Constance and Zurich,—	
Trithorn, NE. of St. Gothard,	9,752
Ober-Alpstock, 6 miles NE. of Andermatt, canton of Uri,	10,916
Crispalt, 10 miles NE. of Andermatt,	6,874
Bristenstock, or the *Stégherberg*, a little to the NW. of Crispalt,	8,016
Dödi, Toedi, Piz Russein, or *Piz-Krap-Klarand*, in the SW. of the canton of Glaris, N. Lat. 46° 48′, E. Long. 48° 52′,	11,766
Windghelli, a little to the W. of the Dödi,	9,339
Scheerhorn, a little to the N. of the Dödi,	10,865
Haustock, } *Höhe-Kisten*, } E. of the Dödi, on the frontier of the Glaris and the Grisons,	9,453 / 10,963
Martschenstock, }	10,216
Scheibe, in the SE. of the canton of Glaris,	9,986
Kuhfirsten, or *Sieben-Kuhfirsten*, seven peaks of the *Sichelkamm* and *Ochenkamm*, N. of the lake and town of Wallenstadt,	7,407
Sentis, or *Hoch-Sentis*, in the SW. of the canton of Appenzell,	8,268
Lake of Constance,*	1,305
Glarnisch, on the S. side of the lake of Glaris,	9,510
Righi, or *Righiberg*, between the lakes of Lucerne and Zug,	5,676
Rouſi, Rouffiberg, or *Rotzberg*, on the SE. bank of the lake of Zug,	4,936
Lake of *Zug*,	1,406
Mount Albis, near Zurich,	2,386
Lake of *Zurich*,	1,363

JURA CHAIN,—

Le Recullet (summit of *Mont Thoiry*), two miles SW. of Gex, in the NE. of the department of the Ain,	5,627
La Dôle, eight miles NW. of Nion, canton of Vaud,	5,511
Mont Tendre, on the E. side of the lake of Joux,	5,541
Mont Landoz, on the French frontier, to the W. of the lake of Joux,	4,680
Lac de Joux,	3,259
Source of the *Doubs*, near Mouth, in the SE. of the department of Doubs,	3,045
Mont d' Or, eleven miles S. of Pontarlier, department of the Doubs,	4,797
Mont Suchet, on the French frontier, to the W. of Yverdun, canton of Vaud,	5,148
Mont Chasseron, NNE. of the Suchet, on the borders of Vaud and Neufchâtel,	5,282
Lake of *Neufchâtel*,†	1,437
Le Cabaret de Cernil, in the SW. of the canton of Neufchâtel,	3,881
Mont de Chateleu, on the French frontier, to the W. of the town of Neufchâtel,	4,232
La Chasserale, seven miles E. of Biel, canton of Berne,	5,304
Weissenstein, N. of Soleure, in the canton of that name,	4,770
Mont Terrible, or *Jules Cesar*, to the N. of the eastern bend of the Doubs, in the NW. of Berne,	2,600
City of Basel or Bâle,	827

VORARLBERG CHAIN,—

Scaletta, in the Grisons, 28 miles NE. of Monte Oro,	8,864
Seesa-Plana Prattigau, on the frontier of the Vorarlberg, W. of Mayenfield, in the N. of the Grisons,	9,812
Falkniss, 8 miles NE. of Mayenfield,	8,100
Summit of the *Arlbergs* (Eagle Mountains), N. of the village of Arlberg, in the Vorarlberg,	9,200
Solstein, facing Innsbruck, to the N.	9,705
Almenspitz, } *Watzmann*, near Königsee, } to the N. of the Inn,	8,618 / 9,654
Breithorn,	7,771

CARNIC ALPS,—

Monte Novegno, source of the western feeders of the Brenta,	6,580
Col de Campanazza,	8,524
Cima d' Asta, source of the Brenta, N. Lat. 46° 18′, E. Long. 11° 32′,	9,198
La Marmolata, source of the western branch of the Piave, N. Lat. 46° 26′, E. Long. 11° 55′,	11,508
Monte Mauro, or *Marero*, 18 miles NE. of Belluno,	5,038
Source of the *Tagliamento*, on the N. of Monte Mauro,	4,413
Monte Scuro, N. Lat. 46° 40′, E. Long. 12° 27′,	7,458
Source of the *Piave*, 14 miles E. of Monte Scuro,	4,245
Monte Croce, N. Lat. 46° 35′, E. Long. 13° 2′,	5,433
Le Grand Nabois, S. of Ponteba, in the NE. of Lombardy,	9,593
Mont Schlern,	8,045
Schwartzhorn,	8,058
Town of *Villach*, in Carinthia,	2,430

JULIAN ALPS,—

Northern Branch,—

Prediel, S. of Tarvis,	3,832
Terglou, source of the Save and the Isonzo, N. Lat. 46° 22′, E. Long. 13° 51′,	10,866
Source of the *Save*,	2,650
Keppas or *Mittags-Kogel*, 10 miles NNE. of the Terglou,	6,887
Weleki-Stal, a little to the SE. of the Keppas,	7,330
Pass of *Leobel*, S. of Klagenfurt in Carinthia,	4,298
Owir or *Leobel-berg*, to the E. of Leobel Pass, and 15 miles SE. of Klagenfurt,	7,173
Garic, 30 miles NE. of Petrinia, in Craotia,	2,490
Papuk, 60 miles E. of Petrinia, and 17 miles SE. of Posega,	2,493

* Greatest depth of the Lake, 2,151 feet. † Greatest depth of the Lake, 1,437 feet.

	Feet.
JULIAN ALPS.—Southern Branch,—	
Karst, N. of Trieste,	1,582
Snisnick or *Schneeberg*, 40 miles E. of Trieste, and 13 miles E. of Lake Zirknitz,	7,457
Monte Maggiore, 12 miles SW. of Fiume, on the opposite side of the Gulf of Quarnero,	4,569
APENNINES,—	
Northern Apennines,—	
Passes of *Nava*, *Mantariolo*, and *Borghetto*, to the E. of the Col de Tende (see *Maritime Alps*),—average height,	3,066
Pass of the *Rocca Barbena*, N. Lat. 44° 9′, E. Long. 8° 6′,	2,953
Pass of the *Monte Calvo* or *Calvo*, 10 miles W. of Finale,	2,920
Col de Melogno, N. Lat. 44° 14′, E. Long. 8° 12′,	3,445
Col de St. Jacques, or *San Giacomo*, E. of the preceding, and 10 miles W. of the town of Vado,	2,625
Pass of the *Bocchetta*, 13 miles NW. of Genoa,	2,550
Colmo de Secco or *Bocchetta*,	3,491
Pass of *Montenotte*, leading from Acqui to Savona,	4 460
Pass of *Giovi*, leading from Genoa to Novi,	1,550
Monte de San Pellegrino, N. Lat. 44° 12′, E. Long. 10° 29′,	5,158
Bosco Lungo, N. Lat. 44° 8′, E. Long. 10° 40′,	4,452
Convento di Vernio,	4,170
Col di Pietra Mala, leading from Bologna by Lojano to Florence,	3,294
Petrella,	3,301
Radicofani, volcanic mountain on the S. border of Tuscany, in the highroad between Sienna and Rome,	3,060
Monte Amiuta, volcanic mountain W. of Radicofani,	5,794
Monte Soriano, E. of Viterbo,	4,183
Monte Cimone, between the Modenese and Tuscan territories, N. Lat. 44° 13′, E. Long. 10° 41′,	6,975
Pizzo d' Uccello, } Summits of the *Alpi Appuani*, which contain the	6,147
Monte Sacro, above Carrara, } marble quarries of Carrara, W. of Monte Ci-	5,540
Panie della Croce, } mone,	6,102
Central Apennines,—	
Monte Catria, E. of Cantiano, Papal States, N. Lat. 43° 27′, E. Long. 12° 44′,	5,551
Monte Pennino, NE. of Foligno, Papal States, N. Lat. 43° 6′, E. Long. 12° 52′,	5,167
Monte Sibilla, N. Lat. 42° 53′, E. Long. 13° 14′,	7,212
Monte Vetora, N. Lat. 42° 49′, E. Long. 13° 10′,	8,135
Terminillo Grande, near Civita Ducale, Upper Abruzzo,	7,031
Terminillo Picolo,	6,306
Monte Corno, summit of *Il Gran Sasso d' Italia* (highest point of the Apennines), ENE. of Aquila, N. Lat. 42° 27′, E. Long. 13° 36′,	9,521
Monte Velino, N. of Lake Celano, N. Lat. 42° 11′, E. Long. 13° 6′,	8,183
Pass leading from Aquila to Avezzano,	4,570
Monte St. Oreste (Mons Soracte), 26 miles N. of Rome,	2,140
Rocca di Mezzo, N. Lat. 41° 57′, E. Long. 12° 57′,	4,259
Town of *Tivoli*,	774
Rome (the Capitol),	160
Monte Cavo, 12 miles E. of Albano, in the Campagna,	4,186
Monte Cacume, Campagna, N. Lat. 41° 37′, E. Long. 13° 9′,	3,503
Monte Schiera d' Asino, } W. of the valley of the Tolero, and SE. of Albano,	4,878
Monte Capreo, }	4,816
Southern Apennines,—	
Monte Amaro, summit of *Monte Majella*, SW. of Lanciano, Lower Abruzzo,	9,131
Monte Miletto, E. of Venafro and N. of Capua,	6,744
Monte Calvo, summit of the *Gargano Mountains*, in the NE. of the Capitanata, N. Lat. 41° 45′, E. Long. 16° 8′,	5,295
Vesuvius (Monte Vesuvio), 10 miles E. of Naples, N. Lat. 40° 49′, E. Long. 12° 47′,	3,932
Monte Epomeo, island of Ischia,	2,513
Monte St. Angelo di Castellamare, on the S. side of the Gulf of Naples,	4,688
Monte Sabaro, island of Capri,	3,105
Monte Sivino, province of Basilicata,	6,000
Monte Pollino, or *Il Pollino*, on the S. frontier of Basilicata,	7,076
La Sila, E. of Cosenza, Calabria-Citra,	4,935
Pass near Nicastro, Calabria Ultra,	3,458
Monte Alto, highest summit of *Monte Aspro*, E. of the Strait of Messina,	4,380
Insular or Sicilian Appenines,—	
Pizzo di Case, summit of *Monte Modonia*, S. of Cefalu and W. of Nicosia,	6,509
Cozzo di Mofera, near Polizza,	6,247
Portella dell' Arena,	5,147
Piano di Froglio,	4.954
Monte Cuccio, near Palermo,	3,216
Ætna, or *Mongibello*, Summit,	10,871
Grotto of the Goats,	5,345
Great Glacier,	7,412
Philosopher's Tower,	9,482
The English House,	9,587
Foot of the Cone,	9,790
Volcano of *Stromboli*, Lipari Islands,	2,687

SLAVO-HELLENIC SYSTEM; or EASTERN ALPS.—This great assemblage of mountains may be said to commence in the uplands of Military Croatia, which, according to many geographers, unite the principal chain of this system with the Julian branch of the Western Alps. The chain that we consider to be the principal, and to which we shall apply the term Northern, in order to give it a general denomination, borrowed from its position in reference to other chains detached from it, sets out from the uplands to which we have already adverted, and proceeding first in a south-easterly direction, then bending to the east, takes the names of Dinaric Alps as it traverses Military Croatia and Dalmatia; Nissava Gora and Glubotin between Bosnia on the north, and Herzgovina, Montenegro, and Upper Albania on the south; Tchar-Dag (Scardus) and Argentaro or Egrisou-Dag (Orbelus), between Servia on the north, and Macedonia on the south; and Doubnitza

(Scomius), and Balkan or Eminch-Dag (Hæmus) between Bulgaria and Roumelia, as far as the coast of the Black Sea, where the range terminates.

At three several points of the principal chain other chains are detached, which may be considered of a secondary character, notwithstanding the great elevation of some of their summits. The most western of these we shall name the Southern or Hellenic Chain, as it includes in its different branches nearly all the mountains of the Grecian Peninsula, properly so named. It commences a little to the east of the town of Prisrend in Upper Albania, and due east of the Tchar-dag. It separates Albania from ancient Macedonia, by the ridges of *Candavia*, *Gramnos*, *Samarina*, and *Mavronoros*, or the *Black Mountains*, and terminates in the *Greater Mezzovo* or *Smokobo Mountains* (Pindus), between ancient Thessalia and Epirus, of which the ridge extending into the Morea may properly be deemed a continuation. The ridge of Olympus, now called the *Volutzo Mountains*, between Macedonia and Thessalia, that of Mount Othrys, a little to the north of the river Hellada or Sperchius, and that of Mount Œta, terminating near the Pass of Thermopylæ, are detached from this chain, and stretch eastward towards the Ægean Sea. To the west of Pindus, the *Agrafa Mountains*, consisting of the ridges of *Tzumerka*, and *Mucrinoros*, or the *Long Mountain*, divide the valley of the Aracthus, or Arta River, from that of the Aspropotamo, the ancient Achelous; and farther to the north-west, the *Khimera Mountains* (anciently the *Acroceraunian*) skirt Albania from Cape Linguetta in the north-west, to the Lake of Butrinto in the south-east.

From another central point, a few miles to the east of Ghuistendil and Doubnitza, several ranges are detached in different directions. One of these, the Pounhar-Dag (Pangæus), runs south into Eastern Macedonia. *Monte Santo* (Athos) may be considered an appendage of this range. Another range called the Despoti-Dag (the ancient Rhodope), proceeds south-east, separating ancient Macedonia from ancient Thrace. An elevated plain, through which the Maritza (Hebrus) flows, connects its base with that of Hæmus. A third ridge, which runs north under several names, the principal of which is Planina, skirts Servia on the east, and reaching the Danube near Orsova, joins a branch of the Hercynio-Carpathian system.

From a point near Selimno, two chains are detached from the main ridge, one of which extends into eastern Balgaria, where it forms numerous defiles, in the middle of which Shumla is built. The other chain, a portion of which is called the *Stanches Mountains*, bends to the south-east, and forms the range of *Strandschea* or *Strandjia*, separating the inland plateau of Thrace from the Black Sea. It afterwards divides into two branches, one of which proceeds eastward to the Strait of Constantinople; the other, called the *Tekiri-Dag* (the ancient Ganos), stretches to the western extremity of the Strait of the Dardanelles.

The mountains of Candia, those in the islands of the Archipelago, and also the mountains of the Ionian Isles, may be considered geographical dependencies of this system.

TABLE OF THE CULMINATING POINTS AND OTHER HEIGHTS IN THE SLAVO-HELLENIC SYSTEM.

	Feet.
NORTHERN CHAIN,—	
Dinaric Alps,—	
Mount Kleck, 26 miles SW. of Carlstadt, and a little to the N. of Mount Kapella,	6,926
Mount Kapellu, N. Lat. 45° 1′, E. Long. 15° 15′,	3,117
Mount Plissivitza, 34 miles due E. of Segna or Zengh,	5,742
Mount Dinara, N. Lat. 44° 7′, E. Long. 16° 23′,	7,458
Dinarizze Planini,	5,971
Mount Prologhi, 25 miles SE. of Mount Dinara,	4,475
Mount Biocavo, near Macarska in Dalmatia,	5,201
Balkan, &c.	
Tchar-Dag,	10,000
Egrisou-Dag (Orbelus), in the Argentaro ridge,	8,000
Doubnitza (Scomius),	9.000
Eminch-Dag (Hæmus), in general from	6,500 to 7,500
SECONDARY CHAINS,—	
Southern or Hellenic Chain,—	
Culminating Points of the *Mezzovo* ridge,	9,000
Culminating Points of the *Candavian Mountains*,	7,000
Ridge of the *Albanian Chain* in general,	7,673
Volutzo Mountains in general,	7,000
Mount Pierus, E. of the Lndge Karasou (River Haliacmon), N. Lat. 40° 15′, E. Long. 22° 14′,	*6,161
Mount Lacha (Olympus), 30 miles N. of Ienitchere or Larissa, N. Lat. 40° 5′, E. Long. 22° 21′,	*9,754
Mount Kissovo (Ossa), 18 miles NE. of Larissa, N. Lat. 39° 48′, E. Long. 22° 42′,	*6,407
Mount Zagora (Pelion), on the NE. of the Gulf of Volo, about 45 miles SE. of Larissa, N. Lat. 39° 27′, E. Long. 23° 3′,	*5,310
Mount Itamo, N. Lat. 39° 10′, E. Long. 21° 48′, } in the chain of Pindus,	5,789
Mount Veluchi, N. Lat. 38° 52′, E. Long. 21° 49′, } in the chain of Pindus,	7,657
Janitzou, N. Lat. 39° 1′, E. Long. 22° 5′,	3,431
Megalo Issoma, N. Lat. 39° 1′, E. Long. 22° 13′,	3.045
Andinitza, N. Lat. 39°, E. Long. 22° 25′, } in the ridge of Othrys,	4,392
Jeracovouni, N. Lat. 39° 1′, E. Long. 22° 43′, } in the ridge of Othrys,	5,669
Khlomo, N. Lat. 39° 5′, E. Long. 22° 56′,	2,950
Tragovouni, N. Lat. 38° 59′, E. Long. 23°,	2,106
Goullena, N. Lat. 38° 51′, E. Long. 22° 4′, } in the ridge of Œta,	4,862
Katavothron, N. Lat. 38° 49′, E. Long. 22° 17′, } in the ridge of Œta,	7,071
Bugikaki, N. Lat. 39° 15′, E. Long. 21° 40′,	7,759
Zurmentzallo, N. Lat. 39° 13′, E. Long. 21° 25′,	3,625
Gabrovo, N. Lat. 39° 8′, E. Long. 21° 20′,	6,479
Chelona, N. Lat. 39° 7′, E. Long. 21° 17′,	6,312
Stano, N. Lat. 39° 7′, E. Long. 21° 35′, } in the ridge of Agrafa,	5,538
Carries, N. Lat. 38° 58′, E. Long. 21° 25′,	5,764
Sycharitza, N. Lat. 39° 1′, E. Long. 21° 21′,	5,908
Langadia, summit of Macrinoros Mounts, N. Lat. 39° 2′, E. Long. 21° 12′,	1,433

* Nearly the whole of the heights in this system, as stated in the Table, are either approximate or conjectural. Among the exceptions are a few in the list of the Hellenic Mountains, which were determined trigonometrically during the late survey of the shores of Greece by Captain Copeland, R.N., and which are indicated in the Table by prefixed asterisks.

	Feet.
SECONDARY CHAINS,—(continued)—	
Kastri, E. of the gulf of Arta,	1,565
Amynderos, on the E. of Vonitza,	1,421
Mount Liacoura (Parnassus), 35 miles ENE. of Nepakto or Lepanto,	5,755
Mount Zagora (Helicon), N. of the Bay of Liva-Dostro, and 10 miles SW. of Lake Topolias,	4,500
Mount Cithæron, 10 miles E. of the Bay of Liva-Dostro,	4 156
Mount Pentelicus, 15 miles NE. of Athens,	3,500
Mount Trelovouno (Hymettus), a little to the SE. of Athens,	2,877
Mount Cyllene (in ancient Arcadia), Morea,	7,743
Mount Pentadactylon or *St. Elias* (Taygetus), a ridge ranging from 40 to 55 miles due N. of Cape Matapan, according to Balbi,	7,929
Another authority,†	5,115
Culminating Point of the *Khimera* ridge (Acroceraunian Mountains), the northern termination of which is Cape Linguetta, on the W. of the Gulf of Avlona,	5,115
Chain W. of Ioannina (*Chamousi Mountains*), in general	7,673
Mount Tomarus, 27 miles due W. of Ioannina,	6,100
Insular Summits,—	
Corfu,	1,900
Santa-Maura,	1,300
Thiaka or Ithaca,	1,300
Black Mountain, Kephalonia,	5,356
Zante,	1,300
Eastern Chains,—	
Culminating Points of the *Pounhar-Dag* (Pangæus), to the W. of the Mesto or Karasou River,	5,800
Mount Menikion (Cercine), 60 miles N. of Saloniki,	6,395
Khortiatza, 12 miles SE. of Saloniki,	*3,894
Kholomon, 19 miles SE. of Saloniki,	*3,420
Mountain above Capsokhori, SE. of Lake Ienidja,	3,837
Mountain above Panomi, on the E. of the Gulf of Saloniki,	4,476
Mount Athos, the *Agion-oros* (Holy Hill) of the modern Greeks, and *Monte Santo* of the Franks, N. Lat. 40° 10′, E. Long. 24° 20′,	*6,349
Xanthe, in Gallipoli, N. Lat. 41° 9′, E. Long. 24° 47′,	*3,815
Pilav-Tepeh (Pirnari), NE. of Orphano, N. Lat. 40° 53′, E. Long. 24° 6′,	*6,143
Insular Summits,—	
Mount Ipsario, N. Lat. 40° 42′, E. Long. 24° 43′, Thaso,	*3,428
Mount St. Elias, N. Lat. 40° 43′, E. Long. 24° 40′, Thaso,	*3,374
Mount Fengari, Samothraki, N. Lat. 40° 27′, E. Long. 25° 37′,	*5,248
Mount Delphi, Skopelo,	2,295
Mount Lithada, in the NW. of Negropont,	2,222
Mount Delphi, Negropont, 16 miles W. of Cape Kili,	4,156
Mount Cocyla, Syra,	2,589
Mount Jupiter, Naxia,	3,300
Mount St. Elias, Paros,	2,525
Mount St. Elias, Milo,	2,557
Mount Psiloriti (Ida), Candia, 20 miles N. of Cape Matala,	7,801

HERCYNIO-CARPATHIAN SYSTEM.—This system includes all the mountains and eminences comprehended between the Rhine, Dnieper, and Danube, the plains of northern Germany and those of western Poland. Among the numerous chains thus presented to us, we propose to consider the Carpathians and the Sudetic and Hercynian Mountains as one continuous chain, although these three groups are at different points separated by wide intervals. Looking on this range as the principal chain of the system, we shall name it the *Hercynio-Carpathian*, and restrict the denomination of *Hercynian Mountains* to the eminences which, stretching across an elevated country, frequently furrowed by deep valleys, connect, by means of the ridge of Rauhe-Alb, (or, as it is sometimes improperly named, the Swabian Alps), the extremity of the Erze-Gebirge with the mountains of the Swartz-Wald (Black Forest), or the *Sylva Hercynia* of the ancient geographers. Besides being already consecrated by usage, although in a less extended acceptation, these two combined denominations possess the additional advantage of recalling to the memory the names by which the two extreme portions of the protracted series of heights, which we regard as the principal chain, are designated. If a reason must be assigned to justify the preference given to this series over all the other chains in the system, the superior elevation of its summits may readily be adduced.

The Carpathians or Krapack Mountains, the extreme eastern portion of which formed a part of the *Bastarnian* or *Dacian Alps* of the ancients, may be said to commence a little to the eastward of Kronstadt, in the south-east of Transylvania, and stretching in a north and north-west direction, they separate Moldavia and Gallicia from Transylvania and Hungary, and terminate near the source of the Oder, in the north-west of the latter country. The Carpathians, especially the western series, do not form a regular chain, but rather a high table-land or plateau, sprinkled with isolated groups and small chains. The most elevated of these groups in the Western Carpathians is that of *Tatra*, which extends from east to west between the Poprad and Dunajec rivers on the east and north, and the Waag and Arva on the south and west.

The *Gesenker-Gebirge* (Lower Mountains), between Silesia and Moravia, a very elevated platwau, surmounted by several eminences, unites the Western Carpathians with the prolonged range, named the Sudetic Mountains, which commences to the north-east of the sources of the Elbe, on the confines of Bohemia, Moravia, and Silesia, and separates Bohemia from Silesia, Lusatia, and Saxony, under the names of *Mountains of Glatz*, in the county of that name; *Riezen-Gebirge* (Giants' Mountains), from Trautenau and Friedland to the south of the town of Hirschberg; *Iser-Gebirge*, or *Iser-Kamm* (Crest of the Iser), from the north-west of Hirschberg to Marklissa in Lusatia; *Wohlische-Kamm*, on the south-west of the Iser-Kamm, and *Erzgebirge* (Metallic Mountains), from the west of the Elbe to the sources of the Mulda and Elster, in the south-west of Saxony. The *Fichtel-Gebirge*, in the Bavarian circle of the Upper Mein; and the plateau and elevated hills of the *Seiger-Wald*, in the circles of the Lower Mein and Rezat, connect the western extremity of the Erzgebirge with the chain of the *Rauhe-Alps* in Wirtemberg, which commencing at Konigsbron, near the source of the Brentz, winds along the basin of the Upper Danube, and in the neighbourhood of Ebingen unites with the heights of the

† Felix Beaujour. See "*Orographie de l'Europe*," in the third volume of the "*Recueil des Voyages et des Mémoires*," published by the Geographical Society of Paris.

Swartz-Wald (Black Forest), the latter of which, partly in Wirtemberg, and partly in the Grand-Duchy of Baden, run parallel to the course of the Rhine, as far as Bâle in Switzerland.

Among the numerous mountain chains which are detached from the principal chain, we shall confine our notice to the most important, commencing with those in the east and proceeding westward.

To the south-east of Kronstadt in Transylvania, a ridge called the *Piatra-Taplino Mountains*, formerly the *Bastarnian* or *Dacian Alps*, is detached from the eastern extremity of the Carpathians, and extends in a direction first to the west, then south as far as Orsova on the Danube, separating Transylvania from Walachia. It is very elevated, but the height of its summits is not exactly known. Beyond the Danube it is continued in a range of no great elevation, detached from the Balkan, and forming the connecting link between the Hercynio-Carpathian System and that of the Slavo-Hellenic Alps.

The numerous and elevated mountains of Transylvania, the Bannat, the Bukowine, Upper Hungary and Gallicia, as well as the inconsiderable heights which diversify the plains of the latter country, and those of the Russian governments of Podolia, Volhynia, &c. are all dependencies of the Carpathians.

From a point about 20 miles due south of Mount Krivan in the Tatra group, a detached range the northern portion of which is separated from the principal chain by the south-eastern portion of the Upper Waag, stretches first west, then bending south towards the Danube, is separated by the course of that river from the Bakonier-Wald in the Alpine system; its northern summits are named the *Königsberg Mountains*. To the west of the northern sources of the Waag, two groups, separated from each other by the defile of Jablunka, form the natural boundary between Hungary, Eastern Gallicia, and Moravia; one of these, called the *Baszkid*, is situate between the Arva, Waag, Kissueza, and the sources of the Vistula; the other extends south-west from the Kissueza to Preshurg, under the general name of *Ivornik*, its southern portion being also called *Kleine Karpathen Mountain*.

To the south of the mountains of Glatz, (the southern portion of which are denominated *Eulen-Gebirge* or *Owl Mountains*), a short chain called *Zydarsky Hory*, or *Mohrische-Gebirge* (Moravian Mountains), runs south-south-west, separating Moravia from Bohemia. Westward of that chain, the *Mittel-Gebirge* (Central Mountains), a hasaltic range in the interior of Bohemia or hasin of the Upper Elhe, follows the course of the Eyca.

We have already remarked that the heights of the Swartz-Wald, at the western extremity of the Hercynio-Carpathian chain, approach the suh-Alpine chain of the Jura near Bâle, and we may farther observe that the other numerous groups and ranges of the *Hercynian Mountains*, which may be regarded as of a secondary character, or detached from the principal chain, are in like manner not only connecting links between the Hercynio-Carpathian and Alpine systems, hut also by their extension to the north-west, unite these two great systems of central and southern Europe with the Gallo-Francian system on the west. The most considerahle of these ranges is the chain of the *Boehmer-Wald* (Bohemian Forest), which commencing to the south-east of the Franconian *Fichtel-Gebirge* (Pine Mountains), in the north-east of Bavaria, at the western termination of the Erze-Gehirge, separates Bavaria from Bohemia, and stretches eastward into the Arch-Duchy of Austria. At its termination to the north of Linz, it is separated only by the hed of the Danube from the range detached from the Noric Alps, which stretches to the north-east of Salzburg. To the west and north of the Fichtel-Gehirge are a series of groups, forming broken ranges, extending generally towards the Rhine. The most important of these are the *Franken-Wald* (Franconian Forest), in the Bavarian circle of the Upper Mein; the *Thuringer-Wald* (Forest of Thuringia), in the Saxe-duchies, part of the electorate of Hesse-Cassel, principality of Schwartzhurg-Rudolstadt, &c. &c.; the *Eichefeld-Gebirge* (Oak Hills range) with its western hranches, in the Prussian government of Erfurt, and in the clectorate of Hesse; the *Meisner*, in the electorate of Hesse; the *Harz*, in the south of the kingdom of Hanover, in the duchy of Brunswick, and in the Prussian government of Merseherg; the *Rhoen-Gebirge*, or *Höhe Rhoen*, in the Bavarian circle of the Lower Mein; the *Vogelsberg* (Bird Mountains), in the Hessian provinces of Giessen and Fulda; the *Spessart* or *Spesshardt*, in the Bavarian circle of the Lower Mein; the *Oden-Wald*, a volcanic group in the south-east of Hesse-Darmstadt; the *Taussen-Gebirge* or *Die-Höhe* (the ancient Taunus), in the south of the duchy of Nassau; and the *Wester-Wald*, in the Prussian governments of Cohlentz and Arensherg. With reference to the two last-named groups, it may he remarked, that the narrow valley of the Rhine, at a point near Bingen, separates the Taussen from the Hundsruck, a group in the Gallo-Francian system, and again in the neighhourhood of Andernach, separates the Westerwald from the Eifel-Gebirge, which also helongs to the same system, (see preceding page 145). Lastly comes the *Egge*, in the Prussian government of Minden and Hanoverian principality of Osnahruck; in the former of which, and connected with these hills, is situate the narrow passage called the *Porta Westphalica*, opened up by the river Weser in forming its hed; and farther north, several heights, which may be named the *Danish Group*, and regarded as northern outliers of this system, are found in continental Denmark and the neighhouring islands.

CULMINATING POINTS AND OTHER HEIGHTS IN THE HERCYNIO-CARPATHIAN SYSTEM.

	Feet.
HERCYNIO-CARPATHIAN CHAIN,—	
Carpathians (properly so called), Krapacks, or *Western Carpathians*,—	
Budos-Hegy (*Budislaw?*), 40 miles NNE. of Kronstadt, Transylvania,	7,340
Sninzky Kamau, 47 miles ENE. of Kaschau in Hungary, N. Lat. 48° 52′, W. Long. 22° 16′,	3,525
Peak of Lomnitz, N. Lat. 49° 2′, E. Long. 20° 16′,	8,465
Kriwan, N. Lat. 49° 8′, E. Long. 20° 12′,	8,031
Grunesee-Spitze,	8,206
Eisthaler-Spitze,	8,524
Csabi, N. Lat. 49° 5′, E. Long. 20° 6′,	8,314
Viszoka,	8,314
(Summits in the *Tatra* group)	
Range of the Gesenker-Gebirge,—	
Source of the *Oder*,	1,056
Lissa-Hora, near Teschen,	4,546
Kamm-Koppel,	4,265
Mittelberg,	3,908
Schneeberg, on the confines of Silesia, Moravia, and Bohemia, N. Lat. 50° 8′, E. Long. 16° 45′,	4,784
Sudetic Mountains or Sudetes,—	
Source of the *Elbe*,	4,425
Schneekoppe, or *Riesenkoppe* (in the *Riesen-Gebirge*), the highest point of Germany north of the Danube, N. Lat. 50° 44′, E. Long. 15° 45′,	5,274
Borenberg,	5,020
Great Rad,	5,020
Great Sturmhaube,	4,885
(in the *Riesen-Gebirge*)	

	Feet.
HERCYNIO-CARPATHIAN CHAIN,—Sudetic Mountains or Sudetes continued),—	
Kesselberg, *Lahnberg*, *Schwartz-Koppe*, *Grubenrander*, in the *Riesen-Gebirge*,	4,656 / 4,807 / 4,583 / 4,738
Iser-Kamm, in the *Iser-Gebirge*, culminating point,	4,156
Walter-Dorfer-Spitz, culminating point of the *Wohlische-Kamm*,	2,563
The river *Elbe*, at Dresden,	280
Schneeberg (near Fetschen), N. Lat. 50° 47′, E. Long. 14° 6′,	2,089
Beerhübel, N. Lat. 50° 34′, E. Long. 13° 23′,	2,857
Sonnenwirbel (*Keilberg?*), culminating point of the *Joachimsthal Mountains*, N. Lat. 50° 25′, E. Long. 12° 58′, in the *Erze-Gebirge*,	4,124
Schneckenstein, near the source of the Mulda,	3,060
Hercynian Mountains,—(portion in the Principal Chain),—	
Fichtel-Gebirge,—	
Schneeberg (sources of the Mayne and the Eger), N. Lat. 50° 3′, E. Long. 11° 51′,	3,461
Oschenkopf (between the sources of the Mayne and the Naab), N. Lat. 50° 1′, E. Long. 11° 49′,	3,409
Rauhe Alp, or Mountains of Swabia,—	
Crest of the eastern portion of the ridge in general,	2,700
Town of *Sigmaringen*, on the Danube, N. Lat. 48° 5′, E. Long. 9° 13′,	1,913
Höhenberg,	3,370
Deilinerberg,	3,330
Schafberg, N. Lat. 48° 13′, E. Long. 8° 49′,	3,324
Plätternberg,	3,307
Source of the *Neckar*,	2,290
Schwarz-Wald, or Black-Forest Group,—	
Rossbühl, summit of the *Knebis*, in the SW. of Wurtemberg, N. Lat. 48° 30′, E. Long. 8° 15′,	3,120
Source of the *Danube*, E. of Donauschingen,	2,178
Kandelberg, NE. of Freyburg, N. Lat. 48° 4′, E. Long. 7° 59′,	4,160
Feldberg, Summit, N. Lat. 47° 52′, E. Long. 7° 56′,	4,675
Feldberg, Lentzkircher Hütte,	4,288
Belchenberg, N. Lat. 47° 49′, E. Long. 7° 50′,	4,642
Blauenberg, N. Lat. 47° 37′, E. Long. 7° 41′,	3,822
Rohrkopf, E. of Zell,	3,868
Kohlgarten,	4,039
SECONDARY CHAINS AND RANGES.	
Piatra Taplino Mountains, or Eastern Carpathians,—	
Bukhest or *Buthest*, between the passes of Tomos and Torzburg, 13 miles SSW. of Kronstadt,	8,700
Szurul, E. of Rother-Thurmer Pass, and 20 miles SE. of Hermanstadt,	7,574
Ruska-Poyana, on the frontiers of the Bannat and Transylvania, N. Lat. 45° 49′, E. Long. 22° 30′,	9,912
Mountains of Hungary,—	
Matra, 20 miles W. of Erlau,	3,312
Medves Mountains, 20 miles NW. of Erlau,	2,178
Viszoka, 30 miles ENE. of Schemnitz,	2,952
Klakberg, 15 NW. of Schemnitz,	4,200
Hercynian Mountains,—(Secondary Ranges and Groups),	
Mountains of Moravia and Bohemia, E. of the Böhmerwald,—	
Rotschotte, *Kreutzberg*, in the *Mohrisch-Gebirge*,	1,514 / 2,178
Donnesberg, *Hoeltsch*, in the *Mittel-Gebirge*,	2,673 / 2,153
Hohenstein,	4,284
Ikoen (Bohemian),	3,484
Plockenstein,	4,450
Steinberg,	3,511
Böhmerwald Chain,—	
Lakes of *Teschmitz*,	4,104
Drey Sesselberg, N. Lat. 48° 45′, E. Long. 13° 57′,	4,049
Boubin, or *Kubaniberg*,	4,495
Aussergefeld, N. Lat. 49° 1′, E. Long. 13° 33′,	4,373
Rachelberg, N. Lat. 48° 58′, E. Long. 13° 24′,	4,561
Haydelberg,	4,616
Arber, or *Aidweick*, N. Lat. 49° 7′, E. Long. 12° 46′,	4,613
Village of *Frauenberg*, N. Lat. 49° 41′, E. Long. 12° 44′,	2,608
Thuringer-Wald,—	
Blessberg, source of the Werra, 21 miles SW. of Rudölstadt,	2,748
Schneekopf, or *Beerberg*, N. Lat. 50° 42′, E. Long. 10° 43′,	3,075
Inselberg, N. Lat. 50° 52′, E. Long. 10° 28′,	2,517
Meisner, Culminating Point, N. Lat. 51° 13′, E. Long. 9° 50′,	2,325
Harz, or Hartz Mountains,—	
Zwieselberg, N. Lat. 51° 35′, E. Long. 10° 56′,	1,387
Heinrichshöhe, N. Lat. 51° 48′, E. Long. 10° 37′,	3,409
The *Broken*, or *Blocksberg*, in the SW. of Magdeburg, N. Lat. 51° 48′, E. Long. 10° 36′,	3,658
Great Königsberg, N. Lat. 51° 47′, E. Long. 10° 35′,	3,307
Bruchberg, N. Lat. 51° 47′, E. Long. 10° 29′,	3,235
City of *Göttingen*, N. Lat. 51° 32′, E. Long. 9° 57′,	510
Rhön-Gebirge, or Höhe-Rhone,—	
Engelsberg, near Tann,	2,382
Ellenbogen,	2,620
Kreuzberg, or *Heilige-Kreuzberg*, N. Lat. 50° 20′, E. Long. 10° 1′,	3 027
Drcystelz, near Hamelburg,	2,160
Vogelsberg,—	
Oberwald,	2,430
Taufstein, source of the Nidda,	2,283

SECONDARY CHAINS AND RANGES,—Hercynian Mountains (continued),—	Feet.
Spesshardt,—	
Orber-Reisig, near Orb,	2,130
Höhe-Wart,	1,968
Hockenhöhe,	1,920
Johannisberg, near Aschaffenburg,	1,617
Odenwald,—	
Katzenbuckle,	2,000
Melibocus, S. of Darmstadt,	1,782
Walzknopf,	1,867
Taunus, Taussen-Gebirge, or Die Höhe,—	
Platte, N. of Wisbaden, N. Lat. 50° 7′, E. Long. 8° 14′,	1,597
Ruins at *Königsten*, N. Lat. 50° 11′, E. Long. 8° 27′,	1,342
Altkönig, N. Lat. 50° 13′, E. Long. 8° 28′,	2,560
Gross-Feldberg, NW. of Frankfort, N. Lat. 50° 14′, E. Long. 8° 26′,	2,775
Stoppelberg, near Wetzlar, N. Lat. 50° 35′, E. Long. 8° 32′,	1,227
Westerwald, and neighbouring Groups to the north,—	
Galfinstein, near Kirberg,	1,702
Galgenberg, or *Salzburgerkopf*,	2,776
Löwenberg, summit in the *Siebenberg*, on the E. side of the Rhine, opposite Bonn, N. Lat. 50° 40′, E. Long. 7° 15′,	2,024
Gänschalls, also in the Siebenberg,	1,650
Nordhelle, summit in the *Ebbe-Gebirge*, 17 miles S. of Iserlohn,	2,250
Town of Solingen, N. Lat. 51° 10′, E. Long. 7° 5′,	680
Source of the *Sieg*,	1,880
Balverwald, summit in the *Sauerlands'-Gebirge*, E. of the Ebbe-Gebirge, and N. of the E. branch of the river Lenne,	1,758
Kähle (Col) of *Astenberg*, near Winterberg,	2,707
Bollerberg, near Medebach,	1,404
Danish Group,—	
Kalkberg, near Segeberg in Holstein,	282
Kniosberg, in Schleswig,	423
Himmelbierg, in Jutland,	928
Dysted-bierg, in Zealand,	620
Island of *Heligoland*,	230

SLAVONIC SYSTEM.—Notwithstanding the pompous titles, *Mountains of Waldaï*, *Schemockonskie Mountains*, &c. with which geographers and map-makers have graced the slight undulations which occurs in the vast plateau of Russia, it may without hesitation be affirmed, that this large portion of the European continent presents no series of ridges that can properly be called mountain chains. The whole of that region is only an elevated plain surmounted by hills of greater or lesser altitude, but none of which reach a height of more than 1,150 feet above the level of the Baltic. Hassel and other German geographers have named the central portion of these eminences the *Alauni Mountains;* Bruguière denominates them the *Sarmatian System*, while Malte-Brun simply applies the name of *Plateau of Waldaï* to the whole of the region in which they are found. The highest of these eminences, or those which have been called *Waldaï Mountains*, are situate between the governments of Twer and Novgorod, their culminating point being between Ostaschkow and Waldaï. The other Waldaian hills are distributed over the governments of Moscow, Smolensk, Toola, Orel, and Koursk. The eminences dignified with the denomination of *Schemockonskie Mountains*, and which stretch along the southern border of the government of Arkhangel, are attached on one side to the Scandinavian System, and on the other to that of the Ourals; while the prolongation of the heights of Waldaï connects with the Slavonian System, the hills in the governments of Witebsk and Courland; and the continuation of the rising grounds in the government of Koursk appears in like manner to connect the south-western extremity of the Slavonic System with the farthest eastern branches of the Hercynio-Carpathian System, by the steep granitic rocks near the course of the Dnieper in the government of Iekaterinoslav. The Slavonic System, although the least elevated of all those which belong to Europe, is nevertheless the most extensive. From its flanks descends the Volga, the largest river of the European continent, and it also gives birth to the Dnieper and the Don. The mountains in the *Crimea* are allied to those included in the Caucasian System.

The most remarkable heights in the Slavonic System are,—	Feet.
Town of *Novgorod*, N. Lat. 58° 31′, E. Long. 31° 16′,	453
Table-land or Plateau between Ostaschkow and Waldaï or Valdaï,	1,119
Town of *Ostachkow*,	856
City of *Moscow*, N. Lat. 55° 46′, E. Long. 37° 33′,	928

SCANDINAVIAN SYSTEM.—This system embraces all the mountains of Norway, Sweden, and Lapland, together with the heights which diversify the surface of Finland and the governments of Olonetz and Arkhangel. The river Onega and the White Sea may be considered its eastern boundary, and its other limits are traced by the Gulf of Finland, Baltic, Kattegat, and North Sea. The principal chain commences at Cape Lindesnæs, the southern extremity of Norway; it expands over Norway, the main ridge in the northern portion of its course marking the line of distinction between that country and Sweden; it then traverses Finmark, and terminates at Cape Nord-Kyn, the most northern point of continental Europe. The ancient geographers denominated this chain *Mons Sevo;* but as it bears no modern general name, we propose to call it the *Scandinavian Chain*. In its long course towards the north it takes the following names,—Thulian Mountains or Langfield in Norway, as far as the 62d parallel: Dovre-Fial* or Dofre-Field or Dofrines in the same country, from the 62d to the 63d parallel; and Koelen or Kioel between Norway and Sweden and in Finmark, from the 63d parallel to the Nord-Kyn. Of the mountains thus collectively denominated, it is only the central portion or Dofrines in which the features of a true chain can be recognised; the *Thulian Mountains* and the *Kioel* are, properly speaking, only table lands surmounted by isolated ranges and groups.

At the eastern extremity of the Dofrines, and immediately in the neighbourhood of Syltfiallen, some ranges are detached from the principal chain; they enter Sweden, and stretch into Jamtland, Herjeadalen and Kopparberg, where they terminate in hills of no great elevation.

Some small eminences, which are detached from the plateau of Lapland, join the rocky hills of Finland, and those in the government of Olonetz, forming ranges which are lost in winding among the

* *Fjæl* (Fial) or *Fjell*, in Swedish, signifies a ridge or chain of mountains. *Field* is the Danish name for a mountain or hill.

numerous lakes of these countries. In some maps, these ranges appear under the names of *Manskella Mountains* in Finland, and *Mountains of Olonetz* in the government of that name—denominations to which, from their slight elevation, they are not entitled. Other heights, still less considerable, set out from the same plateau, and extend over the western portion of the government of Arkhangel.

The groups of the Lofoden and Tromsen Islands, so famous for their fisheries, and which form the Norwegian Archipelago, may be considered a dependent chain of this system, and named the Maritime Chain.

TABLE OF THE CULMINATING POINTS AND OTHER HEIGHTS IN THE SCANDINAVIAN SYSTEM.

PRINCIPAL CHAIN,—	Feet.
Thulian Mountains,—	
Brok-field, on the E. of Lake Kvide, Christiansand,	4,188
Mountains on the W. of *Kongsberg*, province of Aggershuus,	2,970
Hougle-field, N. Lat. 59° 40′, E. Long. 7° 23′,	4,668
Gousta, the southernmost of the Norwegian glaciers, N. Lat. 59° 45′, E. Long. 8° 38′,	6,477
Lake Tind, a little to the E. of the Gousta glacier,	630
Blee-field, on the E. of Lake Tind,	4,500
Melderskin (summit always above the lower limit of perpetual snow), near Rosendal, on the Hardanger-Fiord, N. Lat. 60°,	4,859
Gute-field, N. Lat. 60° 0′, E. Long. 7° 27′,	4,774
Tind-field, N. Lat. 60° 5′, E. Long. 8° 20′,	4,871
Glacier of *Folgefund*, on the E. of Hardanger-Fiord,	5,442
Folgefund (summit), N. Lat. 60° 7′, E. Long. 6° 25′,	5,633
Eggedals-field, NW. of Drammen, and between the river Eggedals and Kroren-Fiord,	4,320
Glacier of *Haartigen*, N. Lat. 60° 12′. E. Long. 7° 32′,	5,550
Glacier of *Jokeln*, N. Lat. 60° 23′, E. Long. 7° 38′,	5,550
Glacier of *Halling Skarvan*, E. of the Jokeln Glacier,	5,460
Mountains SW. of *Hoel*, N. Lat. 60° 25′,	5,863
Hardanger-field (summit), N. Lat. 60° 40′, E. Long. 7° 50′,	5,748
Scogshorn, N. Lat. 60° 45′, E. Long. 8° 55′,	6,926
Sommen, in the *Fille-field*, N. Lat. 61° 0′, E. Long. 8° 20′,	4,797
Pass of *Fille-Field*, on the road from Bergen to Christiania, N. Lat. 61° 4′, E. Long. 8° 2′,	3,975
Mugna-field, N. Lat. 61° 20′, E. Long. 8° 45′,	7,215
Sogne-field, N. Lat. 61° 22′, E. Long. 8° 3′,	7,182
Skagstol-Tind, N. Lat. 61° 24′, E. Long. 7° 55′, { Orographie de l'Europe, / Balbi,	8,101 / 8,395
Justedalsbräen, N. Lat. 61° 30′, E. Long. 6° 50′,	5,847
Lang-field, N. Lat. 61° 53′, E. Long. 7° 50′,	6,598
Städyan, E. of the sources of the Dall,	3,810
Table-land, forming the base of this chain or group,	3,200
Dovre-Field, or Dofrines,—	
Pighætten, N. Lat. 62° 2′, E. Long. 9° 30′,	6,788
Lake of *Lessöevarks*, situate on the superior level of the ridge, and said to discharge its waters both into the North Sea and into the *Skager-Rack*, N. Lat. 62° 8′, E. Long. 8° 38′,	1,958
Tron-field, on the Glommen River, near Tonset, N. Lat. 62° 14′, E. Long. 10° 52′,	5,870
Sneehætten, generally considered the highest of the Scandinavian Mountains,* N. Lat. 62° 20′, E. Long. 9° 20′,	8,120
Helagsfjallet, N. Lat. 62° 53′, E. Long. 12° 28′,	5,945
Syl-Fiellen, N. Lat. 63° 0′, E. Long. 12° 12′,	6,486
Koelen, or Kioei Mountains,—	
Gencken, N. Lat. 63° 14′, E. Long. 11° 45′,	4,871
Areskutan, N. Lat. 63° 27′, E. Long. 12° 53′,	4,721
Sulitelma, N. Lat. 67° 5′, E. Long. 16° 20′,	6,178
Pass of *Almajalos*, N. Lat. 67° 12′, E. Long. 16° 12′,	5,545
Mountain E. of *Rorstad*, N. Lat. 67° 33′, E. Long. 15° 37′,	4,692
Ankenæs, N. Lat. 68° 19′, E. Long. 17° 24′,	4,871
Lyngen Mountains, N. Lat. from 69° to 70°, E. Long. from 19° to 21°,	4,300
Jauriswara, W. of the river Tana, on the S. frontier of Finmark,	1,806
Lake *Enara*, in Russian Lapland,	726
Voryeduder, in Finmark, N. Lat. 69° 45′, E. Long. 24° 38′,	3,600
Peninsula of *Joke-field*, N. Lat. 69° 15′, E. Long. 22° 50′,	4,370
Maritime, or Insular Chain of Lapland,—	
Glaciers in the islands of *Ost Waagen* and *Hindoen*,	3,900
Glacier in the island of *Seiland*,	4,156
Summits of the islands of *Fugloe*, *Vannen*, and *Arenoe*,	3,200
North Cape, island of Mageroe,	1,161

SARDO-CORSICAN SYSTEM.—This system, situate in the Mediterranean, comprehends all the mountains of Corsica and Sardinia. The principal chain extends from the narrow and hilly peninsula named Cape Corso, in the north of Corsica, to Cape Teulada and Cape Carbonara, in the south of Sardinia, the Strait of Bonifacio, which divides it into two portions, being merely a break or rent in its ridge.

The ranges, primary or detached, which are the component parts of this chain, may thus be enumerated:—In CORSICA—The range of *Titime*, commencing in Cape Corso, in the north of the island; the heights of *Frontogna* on the north-west; the *Mountains of Cagnone* in the centre; and the range of *Caona* on the south. In SARDINIA—The *Lymbara Mountains*, to the south of Tempio, in the north of the island; the *Nurra Mountains*, extending from the gulf of Asinara to that of Alghero; the *Marghine Mountains*, to the east of Bosa, on the western coast—the main ridge consisting of the *Ginargentu Mountains*; and parallel to the last-named ridge, but nearer the eastern coast, the *Ogliastra Mountains*, which are continued in the *Budui Mountains*, to the south of the river Flumendoso.

* In Balbi's "Abrégé de Géographie," *Skagstol-Tind* is named as the culminating point of the system, and its elevation stated to be (*See a preceding portion of our Table*) 1,313 toises, or 8,395 English feet.

TABLE OF THE CULMINATING POINTS AND OTHER HEIGHTS IN THE SARDO-CORSICAN SYSTEM.

PRINCIPAL CHAIN,—	Feet.
Corsican Ridge,—	
Monte Stello, S. of Cape Corso and N. of Bastia, N. Lat. 42° 47′, E. Long. 9° 24′,	4,530
Monte Paglia Orba, N. Lat. 42° 21′, E. Long. 8° 52′,	8,690
Monte Rotondo, source of the Liamone, N. Lat. 42° 13′, E. Long. 9° 3′,	9,069
Monte d' Oro, source of the Gravone,	8,702
Punta della Capella, N. Lat. 42° 1′, E. Long. 9° 12′,	6,723
Monte dell' Incudine, N. Lat. 41° 51′, E. Long. 9° 12′,	6,746
Monte Calva, N. Lat. 41° 43′, E. Long. 9° 13′,	5,130
Punta d' Ovace, N. Lat. 41° 35′, E. Long. 9° 5′,	4,900
Sardinian Ridge,—	
Monte Gigantinu (culminating point of the *Lymbara Mountains*), N. Lat. 40° 49′, E. Long. 9° 7′,	3,993
Monte Argentaro, In the W. of the *Nurra* group,	2,010
Cape Caccia, N. Lat. 40° 39′, E. Long. 8° 5′,	510
Monte Ferru (summit in the *Marghine Mountains*), S. of Bosa,	2,736
Monte Albo, 11 miles WSW. of Cape Comino,	2,300
Cape Monte Santo, N. Lat. 40° 8′, E. Long. 9° 45′,	2,400
Monte Schiuschiu (culminating point of the *Ginargentu Mountains*), about N. Lat. 39° 55′, E. Long. 9° 12′,	6,000
Monte Arcuentu, on the S. of the Gulf of Oristano,	2,316
Sette Fratelli (Seven Brothers), W. of Cape Ferrato, E. of the *Budui Mountains*, an N. of Cape Carbonara,	2,310

BRITANNIC SYSTEM. — This system includes the mountains and other eminences in Great Britain, Ireland, the Hebrides, the Orkney and Shetland Isles, and the Danish Islands of Færöe. It presents a number of isolated summits, frequently at considerable distances from one another; some groups of no great extent, and a few continuous ranges, to none of which, with probably the single exception of the Grampians in the north of Scotland, the denomination of "Mountain Chain" can with propriety be applied. From considerations of convenience, rather than with a view to develope any general system of connection between the principal groups and ranges, an attempt from which we are precluded by our limited space, as well as by the difficulties attending the subject, we proceed with our brief descriptions under the following collective heads: — 1*st*, Northern Highlands of Scotland; 2*d*, Grampian Hills; 3*d*, Ranges intermediate between the Grampians and those in which the Cheviots are continued on the north; 4*th*, Cheviot Hills and continuous northern ranges; 5*th*, Great western chain of England; 6*th*, Detached ranges and groups in the east and south of England; 7*th*, Mountains of Ireland; and 8*th*, Chain of summits in the northern and western island groups.

1. NORTHERN HIGHLANDS OF SCOTLAND. — The mountains which compose this remarkable and widely spread group, extend on the west, southwards from Cape Wrath to the Caledonian Canal in Glenmore, or the *great valley*, which throughout its length, from the west coast to the east, separates them from the Grampian chain and its branches. They cover the whole of the western portion of the counties of Sutherland, Ross, and Inverness, and send out branches to the east, particularly in Ross-shire and Sutherlandshire, in the latter of which counties a range detached from a point to the east of Lochmore, stretches to Duncansby-Head, the north-eastern extremity of Caithness-shire, and separates the streams which fall into the German Ocean from those which flow *northward* towards the Atlantic. The loftiest summits in the group are situate in the counties of Ross and Inverness. The country included between Lochbroom, in the north-west of Ross-shire, and Cape Wrath — probably one of the most savage, rocky, and barren tracts in Scotland — has no very high hills, although for a considerable distance inland it is in general elevated about 1000 feet above the level of the sea.

The celebrated mountain *Ben Nevis*, which till lately was considered the highest summit in the British system, may be placed into this group; for although situate to the south of the Caledonian Canal, it is separated from the northern flank of the Grampians by a desolate tract, several miles in width, called the Moor of Rannoch.

2. GRAMPIAN HILLS. — This important range or chain, which throughout nearly the whole of its length marks the line of separation between the Highlands and the Lowlands of Scotland, commences on the south side of Loch Etive in Argyllshire. It first bends east and south into Stirlingshire, then turning to the north-east, it proceeds in a waving line through Perthshire, and along the southern border of Aberdeenshire into Kincardineshire, and terminates between Stonehaven and the mouth of the Dee, in the north-eastern portion of the last-named county. Its loftiest summits are those in the eastern portion of the chain, and particularly the mountains near the sources of the Dee and the eastern tributaries of the Spey. Of these and the other elevations in the high-lands of Aberdeenshire and Kincardineshire, very little has till lately been known, and that alone by the aid of the barometer, but it is proved that there are eminences in that remote district capable of at least throwing a doubt upon the claim of Ben Nevis to be the highest land in Britain.*

Several ranges of no great elevation are detached from the northern face of the Grampians. One of these detached ranges, called the Monagh Lea (*i. e.* the Dark Gray Mountains), a valuable grazing tract in Inverness-shire, stretches in a north-easterly direction between the beds of the rivers Findhorn and Spey, and is continued in *Brae Murray* (Murray Heights), in the detached portion of Inverness-shire, which divides the county of Elgin, and in the Elginshire hills, terminating on the north in Burgh-Head and Stotfield-Head, or Coulard Hill. Another range, which commences in the *Braes of Abernethy*, a little to the north of the lofty granitic group of Ben Mac-Dui, Cairngorm, and Ben Avon, extends also towards the Murray Firth, between the beds of the Spey and the Doveran. Detached or outlying summits, mostly granitic, are sprinkled over the whole of the western and northern portions of Aberdeenshire.

3. RANGES INTERMEDIATE BETWEEN THE GRAMPIANS AND THE NORTHERN CONTINUATIONS OF THE CHEVIOTS. — This remarkable group, occupying a portion of the extensive plain or lowlands comprehended between the primitive stratified and granitic mountains of the Grampian chain on the north, and the transition hills of the south of Scotland on the south, consists of two long and elevated ranges of trap-rocks, the one situate in part to the north of the Forth and Clyde, the other to the south of the former river.

The northern range commences on the east, a little to the south of Montrose in Forfarshire, and it extends south-west as far as the town of Dumbarton on the Clyde. It has no general appellation, but is called the Sidlaw Hills, from nearly its eastern extremity to the Tay; the Ochill Hills, from

* Professor J. D. Forbes, — "*Practical Inquiries connected with the Measurement of Heights.*" — *Edinburgh Journal of Science, N. S. Vol. II.* According to one of the recent measurements above alluded to, *Ben Mac-Dui*, in the group of Cairngorm, on the borders of the counties of Inverness, Banff, and Aberdeen, is 4,390 feet above the level of the sea, or 17 feet higher than Ben Nevis.

the Tay westward to the Forth at Stirling; the Campsie Hills, from the Forth to the western boundary of Stirlingshire; and the Kilpatrick Hills in Dumbartonshire, east of the Leven. Outlying the eastern portion of the range is a small group (also trapean in its geological structure), called the *Lomond* or *Lamond Hills;* it is situate between the Leven and the Eden, in the east of Kinrossshire and the west of Fifeshire.

The range south of the Forth is called the Pentland Hills. It commences about five miles to the south of Edinburgh, and extends in a ridge running from north-east to south-west, as far as the point of junction between the counties of Mid-Lothian, Peebles, and Lanark. Southward from this point it is continued in one of the branches detached from the Lowther Hills, a range which falls to be described in our next numerical section.

Outlying the Pentland range, and sprinkled over the counties of Linlithgow, Mid-Lothian, and Haddington, are a number of isolated summits, highly interesting in a geological point of view, as in their constituent rocks they present nearly every variety of the trap formation, from columnar basalt and greenstones, through all their varieties of porphyries and amygdaloids, to the less perfect wacké. The names, positions, and elevations of the most remarkable of these eminences are given in our table of the heights connected with this system.

4. Cheviot Hills and their northern continuations.—The range of the Cheviots (properly so named), is situate partly in England and partly in Scotland. It separates Northumberland from Roxburghshire, stretches through the latter county in a westerly direction, keeping to the north of Liddisdale, then bending north-west towards the junction of the counties of Roxburgh, Selkirk, and Dumfries, it unites with the Lowther Hills, an extensive group, which, having Ettrick Water, near the above-mentioned junction, for its eastern boundary, spreads over the southern portion of the counties of Selkirk, Peebles, and Lanark, and the north of Dumfries-shire, and in the west of the latter county joins the ridges, which passing through Kirkcudbrightshire, Wigtonshire, and the south of Ayrshire, terminate at Loch Ryan on the Irish Channel.

A branch detached northward from the Lowthers, in the direction of the boundary line between the counties of Lanark and Peebles, joins, as we have already noticed, the southern extremity of the Pentland Hills. A little to the east of that point of junction, and separated from the Pentlands by the basins of the small streams called the North and South Esk, the Moorfoot Hills, a series of heights commencing on the west at Eddleston Water, in the north-east of Peebles-shire, extends east-north-east to Crookston Burn, a feeder of Gala Water, one of the tributaries of the Tweed, on the confines of the counties of Mid-Lothian, Haddington, and Berwick, at which point it unites with the Lammermoor Hills, a range forming in part the boundary between Haddingtonshire and Berwickshire, and terminating at East Castle and St. Abb's Head, in the latter county. A little group called the *Eildon Hills*, of which trap forms the constituent rock, is situate in the north of Roxburghshire, between Ale-Water and the Tweed. A similar group named the *Meagle* or *Meg Hills* occurs in the north-east of Selkirkshire.

5. Northern and Western Chain of England.—This great range extends (not however without some considerable interruptions), from the Cheviots in Northumberland on the north-east to Land's End in Cornwall on the south-west. Its most elevated summits rise somewhat abruptly near the west coast, and its eastern declivities give birth to all the considerable rivers of England, with the exception of the Severn and the Eden. It is usually divided into three portions, bearing respectively the names of the Northern, the Cambrian, and the Devonian ranges.

The *Northern Range* commences at Carter Fell, in the north-west of Northumberland, and stretches southward into the middle of Derbyshire, spreading to the east over a considerable portion of the county of Durham, and the North and West Ridings of Yorkshire, and including as a western branch the elevated hills of Westmorland and Cumberland.

The *Cambrian Range*, or Alpine portion of the great chain of England, extends in various ridges and groups over the whole of the Principality of Wales. The loftiest of the Welsh ridges is that which stretches across Caernarvonshire from south-west to north-east, and of which the culminating point is Snowdon, the most elevated of the British mountains south of the Grampians. Another ridge, which is sometimes called the *Berwyn Mountains*, occupies the eastern side of Merionethshire, and branches out into the neighbouring counties of Denbigh and Montgomery. From the central mass named Plynlimmon, situate on the borders of Montgomeryshire and Cardiganshire, and in which the Wye, the Severn, and several minor rivers have their sources, a range of no great elevation stretches southward to Tregaron, and from thence in a south-westerly direction to the western boundary of Caermarthenshire, and unites with the *Precelly Hills* in Pembrokeshire. Detached from Plynlimmon towards the east are the *Cerri* and *Freiddin Hills*, extending along the vale of the Severn in Montgomeryshire; and the *Bettys Hills*, on the north-eastern borders of Radnorshire. A range called the *Black Mountains*, extends east and north-east from the Llw, in the south-east of Caermarthenshire, across the county of Brecknock to the western borders of Herefordshire and Monmouthshire; the eastern extremity of the ridge is called the *Hatteral Hills*. Outlying the mountains of South Wales, the *Malvern Hills*, on the confines of Herefordshire and Worcestershire, but extending in part into Gloucestershire, form the western boundary of the Severn in its course through the two last-named counties. On the east of the Severn the *Cotswold Hills* stretch through Gloucestershire, in the direction of Warwickshire, and may be deemed a continuation of the great northern range, which, as we have already seen, extends from the Scottish border into the middle of Derbyshire.

The main ridge of the *Devonian Range* extends in a north-easterly direction from Land's End in Cornwall to the middle of Devonshire, and from thence eastward to the valley of the Exe. Its highest point is in the neighbourhood of Oakenham in Devonshire, and in the northern portion of a remarkable elevated and for the most part barren granitic tract called *Dartmoor*, comprehended between Oakenham on the north, Tavistock on the west, Modbury on the south, and Ashburton and Moreton Hamstead on the east. Two inferior ridges, the one skirting the Cornish coast to the north of Trevose Head and Padstow, the other stretching northward from Oakenham, meet on the south of Bideford Bay. A more important ridge follows the coast of the Bristol Channel, from Ilfracombe to Bridgewater. Its western portion is named the *Brendon Hills*, and its eastern the *Quantock Hills*. A little to the east of this range the *Mendip Hills* stretch along the north bank of the Ax, from the mouth of that river to Shepton Mallet, thus terminating not far from the extreme branch of the Cotswold Hills, which extends to the line of the Radford Canal, on the south-west of Bath.

6. Ranges in the South and South-east of England.— The ridges in this class, all of which are composed of chalk hills, inconsiderable in point of elevation, have their origin in the high tableland called *Salisbury Plain*, which covers the portion of Wiltshire to the south of the Wilts and Berks Canal. The principal ridges are three in number. The most southern crosses Hampshire and Sussex, and terminates at Beachy Head on the English Channel. The celebrated sheep pasture tract called the *South Downs*, constitutes the Sussex portion of the ridge. Another range stretches from the north of Salisbury Plain to the eastern portion of Kent. It is not distinguished by any particular designation, except in the neighbourhood of Farnham, in the west of Surrey, where the ridge becoming very narrow, is named the *Hogsback;* to the eastward of this point it expands into the *Surrey Downs*. A third ridge, for the most part of greater elevation than the two to which we have already alluded, commences at Devizes in Wiltshire, and after describing in its course a curved line, having its extreme northern point at Wantage in Berkshire, and its eastern extremity near the bend of the Thames

at Reading, in the same county, it proceeds in a north-easterly direction through the counties of Oxford, Buckingham, Bedford, Hertford, Cambridge, Suffolk, and Norfolk, and terminates between Wells and Hunstanton, on the eastern shore of the Wash. The portion of it extending from Henley in Oxfordshire to Tring in Herts, is called the *Chiltern Hills;* and that in the south of Cambridgeshire is named the *Gogmigog Hills.*

7. MOUNTAINS OF IRELAND. — Ireland, in respect to its orography, presents a remarkable aspect, as its coasts, particularly the southern, south-western, and northern, exhibit a series of ridges of various degrees of elevation, inclosing an extensive plain in the centre of the island, of which nearly a million of acres or 1500 square miles consists entirely of bog-land, occasioned by the extreme flatness of the country.* The great mountainous or alpine tract of Ireland extends from Waterford on the east coast to Dingle Bay on the west, and comprehends the whole of the county of Waterford, and large portions of the counties of Cork and Kerry. The principal ranges in this tract, commencing with those nearest the coast, are the *Commeragh Mountains*, the highest portion of a ridge running along the south bank of the Suir, from the town of Waterford to Clonmell in Tipperary; the *Knockmeledown Mountains*, on the borders of the counties of Waterford and Tipperary to the north of the Blackwater River; the *Neagle* and *Bograh Mountains* in Cork, on the south of the Blackwater; the *Sheehy Mountains*, in the south-west of Cork; the *Cappa Hills*, in the south of Cork; the *Muskerry Mountains*, between the sources of the Sullane and Roughty, in the west of Cork and south-east of Kerry; the *Glanerought* or *Caha Mountains* in Cork and Kerry, between the head of Bantry Bay and Kenmare; *Magillicuddy Reeks* in Kerry, between the Lake of Killarney and Lough Carragh; the *Dunkerrin Mountains*, between the Lake of Killarney and Lough Currane; the *Iveragh Mountains*, to the west of Magillicuddy Reeks; and the *Brandon Mountains*, in the west of Kerry, between Dingle Bay and Tralee Bay.

The mountain ranges (or rather groups) in the interior of this portion of Ireland, are — the *Galtees*, *Oliver Hills*, and *Ballihowra Mountains*, forming a continous ridge, extending west-south-west from the western bank of the Suir, opposite Cahir in Tipperary, into Limerick and the north-eastern portion of Cork; the range formed by the *Doon Mountains*, the *Keeper* (to the north of the Doon Mountains), the *Devil's Bit*, and the *Slievh Bloom* or *Bladmah Mountains*, extending north-east from the eastern bank of the Shannon near the town of Limerick to the river Barrow on the borders of King's County and Queen's County; the *Arra Mountains*, rising above the south-eastern portion of Lough Derg; the *Inchquin* or *Tutlow Mountains*, in the north-east of Clare; and the *Slievh Boughty* or *Derrybryan Mountains*, on the southern border of Galway, from Lough Cooter and Loughrea to Lough Derg.

The principal ranges and groups upon or near the north-western and northern coasts are — the *Glan Hills*, on the south and west of Lough Corrib; the *Twelve Pins*, on the west of Lough Inagh in Connemara, in the north-west of Galway; the *Fernamoor Mountains*, to the west of Lough Mask, in the counties of Galway and Mayo; the *Slievh Dert Mountains*, to the north of Dunmore in the north of Galway; the *Barnagee Mountains*, between Castlebar and Lough Conn, in Mayo; the *Nephin Bog Mountains*, on the west of Lough Conn; the *Slievh Gauff* or *Ox Mountains*, extending from the eastern bank of the River Moy near Lough Cullin to Sligo Bay; the *Curlew Mountains*, on the borders of Sligo and Roscommon; the *Slievh Bawn Mountains*, on the north of Lough Ree in Roscommon; the *Brauleve Mountains*, on the east of Lough Arrow, in the south-east of Sligo; the *Ballynogeerah Hills*, in the north-west of Cavan; the *Derryveagh* and *Arreget* or *Erigal Mountains*, to the north of the River Guiharra, in the north-west of Donegal; the *Carntogher Mountains*, on the borders of Tyrone and Londonderry; and the *Slievhlocher Hills*, in the north-west of Londonderry.

The principal ranges and groups on the east coast are — the *Glenocum Mountains*, extending along the east coast of Antrim; the *Slievh Croob* ridge, in the centre of Down county; the *Mourne Mountains*, in the south of Down county, between Dundrum Bay and Carlingford Bay; the *Slievh Girkin* or *Newry Mountains*, in the south of Armagh; the *Wicklow Hills*, in the county of that name; the *Black Stairs Hills*, on the borders of Carlow and Wexford; and, farther inland, the *Dysart Hills*, to the east of Ballinakill, on the borders of Queen's County and Kilkenny.

8. CHAIN OF SUMMITS IN THE WESTERN AND NORTHERN ISLAND GROUPS. — This division comprehends all the eminences in the Isle of Man; Bute; the island dependencies of Argyllshire; the island dependencies of the counties of Inverness and Ross, or the Inner and Outer Hebrides; the Orkney Islands; the Shetland Islands; and the Danish islands of Færöe. The names, positions, and elevations of the principal summits in these islands will be found in the concluding section of the following Table: —

TABLE OF THE CULMINATING POINTS AND OTHER HEIGHTS IN THE BRITANNIC SYSTEM.

NORTHERN HIGHLANDS OF SCOTLAND, —	Feet.
Cape Wrath or *Parph Head*, the NW. point of Sutherlandshire, N. Lat. 58° 36′, W. Long. 4° 56′,	600
Dunnet Head, the N. point of Scotland, N. Lat. 58° 40′, W. Long. 3° 29′ (height of the lantern of the light-house),	346
Pap of Caithness, Caithness-shire, 24 miles S. by E. of Thurso,	1,229
Ord of Caithness, 29 miles S. of Thurso,	1,250
Morven (*i. e.* the great mountains), on the S. of Berrydale Water, in the S. of Caithness-shire,	2,334
Ben Ormen (Bein Ormin, *i. e.* gold dust mountain), Sutherlandshire, N. Lat. 58° 14′, W. Long. 4° 14′,	2,307
Ben Clibbrick (Bein Clibereach, *i. e.* mountain of the skirmish), Sutherlandshire, on the S. of Loch Naver, N. Lat. 58° 15′, W. Long. 4° 21′,	3,165
Ben Hee (Bein Shee, *i. e.* fairy mountain), Sutherlandshire, on the E. of Loch More,	2,853
Ben More (*i. e.* great mountain), Sutherlandshire, on the E. of Loch Assynt,	3,231
Ben Dearg (*i. e.* red mountain), Ross-shire, 6 miles ESE. of the head of Loch Broom,	3,551
Ben Lair, Ross-shire, on the N. of Loch Maree,	3,000
Ben Wyvis (Bein Uamhais, *pronounced* Uavis, *i. e.* mountain of horror or terror), Ross-shire, and partly in Cromarty; 10 miles NW. of Dingwall,	3,720
Ben Attow (Bein a tubha, *pron.* Bein a tu, *i. e.* thatch or rush mountain), on the borders of Ross-shire and Inverness-shire, N. Lat. 57° 16′, W. Long. 5° 14′,	4,000
Mealfourvony (Meal chuirn mhonidh, *pron.* Meal vurn voni, *i. e.* the height of mountain streams), Inverness-shire, on the W. of Loch Ness, and 19 miles SW. of Inverness,	2,730
Craig Phadrick, Inverness-shire, 3 miles SW. of Inverness,	1,150

* Parliamentary Paper.

	Feet.
NORTHERN HIGHLANDS OF SCOTLAND (continued)—	
Highest point of the Caledonian Canal, between Loch Lochie and Loch Oich,	90
Loch Ness,	45
*Ben Nevis** (Bein a Bhais, *pron.* Ben e vais, *i. e.* mountain of death), Inverness-shire, N. Lat. 56° 47′, W. Long. 4° 47′,	4,373
Tarn or mountain lake on the northern slope of Ben Nevis,	1,709
GRAMPIAN MOUNTAINS, †—	
Principal Chain,—	
Cruachan Ben or *Ben Cruachan* (*i. e.* mountain the summits of which resemble stacks or ricks), Argyllshire, rises above Bunawe, on the S. side of Loch Etive,	3,670
Ben Eim, Argyllshire, at the head of Loch Long,	3,301
Ben Arthur or the *Cobler*, Dumbartonshire, on the S. of Arrochar, near the head of Loch Long,	2,863
Ben Lomond (*i. e.* the bare or naked mountain), Stirlingshire, on the E. side of Loch Lomond, N. Lat. 56° 11′, W. Long. 4° 36′,	3,191
Loch Lomond (average height of its surface),	22
Ben Ledi (Bein le Dee, *i. e.* mountain of gods), Perthshire, 5 miles W. by N. of Callender,	2,863
Ben Voirlich (Bein Mhorlie, *pron.* vorlie, *i. e.* the mountain of great flat stones), Perthshire, 9 miles S. by W. of Comrie,	3,180
Benchonzie, or *Achonzie* (Bein Chonich, *i. e.* foggy mountain), Perthshire, 8 miles NW. of Crieff,	3,028
Ben More (*i. e.* great mountain), Perthshire, on the S. of Loch Dochart, 10 miles SW. by W. of Killin,	3,818
Stobinnain, 2 miles SE. of Ben More,	3,794
Ben Lui (Bein Laoidh, *pron.* Ben lui, *i. e.* calf or fawn mountain), Perthshire, 14 miles W. by S. of Killin,	3,651
Meal Girdy (*i. e.* the rejoicing height), Perthshire, 6 miles NW. by N. of Killin,	3,364
Ben Lawers (Bein Labhair, *i. e.* echoing mountain), Perthshire, 7 miles NE. by N. of Killin,	3,945
Schiehallion (Sith Chaillen, *i. e.* female fairy [mount]), Perthshire, 16 miles NE. by N. of Killin, N. Lat. 56° 40′, W. Long. 4° 5′,	3,514
Ben Dearg or *Deirg* (*i. e.* red mountain), Perthshire, 7 miles E. by N. of Blair Atholl,	3,550
Ben Ghe (Bein Glaodh, *i. e.* mountain of outery), Perthshire, a group on the E. of Glentilt, and 7 miles NE. of Blair Atholl, — *Carn-an-gowar*, its highest summit,	3,690
House of the gamekeeper, in the middle of Glentilt,	700
Spittal of *Glenshee*, village in the NE. portion of Perthshire,	1,100
Scarscoch, in the extreme SW. portion of Aberdeenshire, and at the S. extremity of the great ridge or mass which diverges to the N. of the line of the principal chain, and has its northern termination in the Cairngorm group,	3,402
Ben Macdui, or *Ben Muedhui*‡ (Bein Muie Dui, *i. e.* black boar mountain), Aberdeenshire, on the S. side of Loch Avon, N. Lat. 57° 6′, W. Long. 3° 37′,	4,390
Cairngorm (*i. e.* the blue cairn), Inverness-shire and Banffshire, N. of Ben Macdui, in the same group,	4,095
Ben Avon or *Aven* (Bein Abhain, *pron.* aven, *i. e.* river mountain), Aberdeenshire and Banffshire, 7 miles E. by N. of Ben Macdui,	3,967
Cairntoul (*i. e.* cairn or hill of holes), Aberdeenshire, near Ben Avon,	4,245
Ben Uarn, Perthshire and Aberdeenshire, 10 miles E. of the Scarscoch,	3,589
Lochan-y-gar, Aberdeenshire, 6 miles SE. of Castletown of Braemar,	3,777
Mount Keen, Aberdeenshire, N. Lat. 56° 59′, W. Long. 3° 4′,	3,180
Battock, Kincardineshire, near the junction of that county with those of Aberdeen and Forfar,	2,600
Cacrloch, or *Kerloach*, Kincardineshire, 10 miles E. by N. of Battock Hill, and 10 miles W. by N. of Stonehaven,	1,890
Catlaw, Forfarshire, 7 miles NW. of Kirriemuir,	2,264
Flat called the *Howe of the Mearns*, traversed by the great road between Brechin and Stonehaven,	294
Detached Northern Ranges, Groups, and Summits,—	
The *Monach Lea* (*i. e.* dark gray mountains), Inverness-shire and Elginshire,	?
Beinrinness, Banffshire, 12 miles SW. by W. of Keith,	2,747
Corryhabbies, Banffshire, a little to the SE. of Beinrinness,	2,558
Knock Hill, Banffshire, 9 miles SW. of Banff,	2,500
The *Buck* or *Cabrack Buck* (a summit terminating a short range of the Grampians, detached from Ben Avon, in the Cairngorm group, and running N. of the Dee), Aberdeenshire, 13 miles SSW. of Huntly,	2 377
Morven (*i. e.* the large mountain), Aberdeenshire, 14 miles W. by N. of Kincardine O'Neil,	2,880
Highest point of *Glentanar*, Aberdeenshire, about 9 miles WSW. of Kincardine O'Neil,	2,500
RANGES INTERMEDIATE BETWEEN THE GRAMPIANS AND NORTHERN BRANCHES OF THE CHEVIOTS,—	
Northern Range,—	
Sidlaw Hills,—	
Highest point of the *Garvock Hills* (a continuation of the Sidlaw Hills), Kincardineshire, a little to the S. of Laureneekirk,	1,003
Redhead, Forfarshire, on the S. of Lunan Bay,	200
Hill of Guthrie, Forfarshire, 7 miles E. of Forfar,	500
Dunnichen Hill, Forfarshire, 5 miles ESE. of Forfar,	720
Town of Forfar,	221
Belmont, Forfarshire, 5 miles SW. of Glamnis,	759
Dundee Law, on the NW. of Dundee,	525

* Popularly, though erroneously, considered the highest of the British mountains. See remark and foot-note, p. 158.

† Although, for the sake of convenient arrangement, the mountains in the Western Islands of Scotland appear in another portion of this table, yet both in respect to their elevation and their geographical structure, they are, properly speaking, a continuation of the great Grampian range.

‡ See remark and foot-note, p. 158.

RANGES INTERMEDIATE BETWEEN THE GRAMPIANS AND NORTHERN BRANCHES OF THE CHEVIOTS,—

Northern Range (continued),—

Sidlaw Hills,— *Feet.*

Sidlaw Hill, *King's Seat*, *Kinpurnie Hill*, } Highest points in the Forfarshire Sidlaw Range, 1,406 1,258 1,150

Dunsinnan Hill, Perthshire, 7½ miles NE. of Perth, 1,012

Kinnoul Hill, Perthshire, on the E. of Perth, 632

Ochil Hills,—

Ben Clach (*i. e.* stormy mountain), Clackmannanshire, 5 miles N. by E. of Alloa, 2,359

Hill of Alva, Stirlingshire, 6 miles NE. of Stirling, 1,600

Dunmyott, Stirlingshire, 2½ miles N. of Stirling, 1,345

Campsie and Kilpatrick Hills,—

Campsie Hills, highest summit, about 1,500

Rock of Dumbarton Castle, 500

Lomond or Lamond Hills, and other Heights in Fifeshire,—

Bishop's Hill, or *West Lomond*, Kinross-shire, 5 miles ENE. of Kinross, 1,280

East Lomond Hill, Fifeshire, on the S. of Falkland, 1,260

Largo Law, Fifeshire, on the N. of Largo, 952

Kelly Law, Fifeshire, 4 miles NW. of Anstruther. 800

Southern Range,—

Pentland Hills,*—

Kirkyetton, Edinburghshire, 5½ miles SSW. of Edinburgh Observatory, and 3¾ miles ESE. of the village of Currie, 1,569

Allermuir, Edinburghshire, 3 miles ESE. of Currie, 1,616

Castle-Law, Edinburghshire, 3 miles SE. by E. of Currie, 1,390

Carnethy Hill, Edinburghshire, 4 miles SSE. of Currie, 1,700

East Black Hill, Edinburghshire, 4½ miles N. by W. of Currie, 1,876

West-Kip, or *Scald Hill*, Edinburghshire, 4½ miles S. by W. of Currie, 1,786

East Cairn Hill, or *Harper's Rig*, Edinburghshire, 6 miles SW. by S. of Currie, 1,802

Deerhope Rig, Peebleshire, 4 miles N. by W. of Linton, and 6½ miles SSW. of Currie, 1,718

Detached Eminences, &c. outlying a portion of the preceding ranges,—

Misty Law, Renfrewshire, 9 miles S. by E of Greenock, 1,240

Neilston Craig, Renfrewshire, 5 miles S. by W. of Paisley, 820

Summit level of Glasgow, Paisley, Kilmarnock, and Ayr railway, 96

——— Glasgow, Paisley, and Greenock railway, 66

Kirk of Shotts (the highest point between the Forth and Clyde), Lanarkshire, E. of Airdrie, about 800

Summit level of the Forth and Clyde Canal, 145

——— Union Canal, 226

——— Edinburgh and Glasgow Railway, 226

Cairnaple, Linlithgowshire, 3¾ miles S. by W. of Linlithgow, 1,492

Cockleroy (Cuckold le Roi), Linlithgowshire, 1½ miles SSW. of Linlithgow, 866

Binny Craig, Linlithgowshire, 5 miles SE. by E. of Linlithgow, 711

Dalmahoy Craigs, Edinburghshire, 3 miles W. by S. of village of Currie, 849

Corstorphine Hill, Edinburghshire, 3½ miles W. of Edinburgh, 470

Edinburgh Castle Rock, 434

Calton Hill, Edinburgh, summit 356

Base of the Astronomical Circle, Edinburgh Observatory, Calton Hill, N. Lat. 55° 57′ 20″, W. Long. 3° 11′ 40″ 346

Palace of Holyrood, at the foot of the ridge on which the Old Town of Edinburgh is built, 118

Arthur's Seat, *Salisbury Craig*, } Skirting Edinburgh on the E. 822 550

Blackford Hill, 2 miles S. of Edinburgh, 531

Buckstane, summit of the *Braid Hills*, 3 miles S. of Edinburgh, 690

The *Roman Camp* Heights,† Edinburghshire, summit 3 miles SE. of Dalkeith, 876

Traprain Law, Haddingtonshire, 4½ miles E. of Haddington, 700

North Berwick Law, Haddingtonshire, 1 mile S. of North Berwick, 940

The *Bass Rock* (Firth of Forth), Haddingtonshire, N. Lat. 56° 4′, W. Long. 2° 45′ 400

Isle of May (Firth of Forth), Fifeshire, N. Lat. 56° 11′, W. Long. 2° 33′, 180

Inchkeith (Firth of Forth), Edinburghshire, N. Lat. 56° 2′, W. Long. 3° 8′, base of the lighthouse, 188

CHEVIOT HILLS AND THEIR BRANCHES,—

The Cheviots Proper,—

Cheviot, Northumberland, 7 miles SW. of Wooler, 2,658

Carter-Fell, Roxburghshire, 10 miles SSE. of Jedburgh, 1,502

Wisp-Hill, Dumfries-shire, 11 miles N. of Langholm, 1,940

Tudhope, *Millenwood-Fell*, *Wind-head*, } in the Liddesdale branch, in the SW. of Roxburgh-shire, and bordering on Dumfries-shire, 1,830 2,000 2,000

Lowther Hills,—

Ettrick Pen, Selkirkshire, 20 miles SW. of Selkirk, 2,258

Ward Law, Selkirkshire, 16 miles SW. by W. of Selkirk, 1,900

Whitecombe-Edge, Peebles-shire and Dumfries-shire, 16 miles SSW. of Peebles, 2,685

Hart-Fell, Dumfries-shire and Peebles-shire, 5 miles N. of Moffat, 2,635

Queensberry Hill, Dumfries-shire, 8 miles WSW. of Moffat, 2,259

Lowther Hill, Lanarkshire, 2 miles SE. by S. of the village of Leadhills, 2,522

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* This range is continued southward from the junction of Edinburgh, Lanarkshire, and Peebles-shire, by a branch of the Lowthers—*which see*.

† These heights form part of a limestone and sandstone ridge, which commences on the west at the valley of the Gore Water, and extends along the north side of the valley of the Tyne into Haddingtonshire. To the eastward of Tranent, the ridge expands into a level, but somewhat elevated tract, called *Gladsmuir* (*i. e.* the gled's or hawk's moor), and afterwards unites with the trap hills of *Garleton* and *Byres*, about 2 miles to the N. of Haddington.

CHEVIOTS AND THEIR BRANCHES (continued),—

	Feet.
Lowther Hills,—	
Village of *Leadhills* (the highest inhabited place in Great Britain), Lanarkshire, N. Lat. 55° 24′, W. Long. 3° 48′,	1,280
Tintoc, Lanarkshire, 7 miles SE. of Lanark,	2,306
Culter-Fell, Lanarkshire, 5¾ miles S. of Biggar,	2,440
Source of the River Tweed, in the S. of Peebles-shire,	1,500
River Tweed at Peebles,	500
Broad Law, Peebles-shire, 12 miles SW. of Peebles,	2,741
Windlestrae Law, Selkirkshire, 8 miles WNW. of Galashiels,	2,095
Western Branches of the Cheviots and Lowthers,—	
Cairn-Kinnow, Dumfries-shire, 5 miles S. of Sanquhar,	2,080
Cairnsmuir of Deugh, Kirkcudbrightshire, 5 miles E. of Loch Doon, on the borders of Ayrshire,	2,597
Cairnsmuir of Fleet, Kirkcudbrightshire, 6 miles SW. of New Galloway,	2,329
Criffel Hill, Kirkcudbrightshire, N. Lat. 54° 54′, W. Long. 3° 39′,	1,830
Moorfoot Hills,—	
Joffrie's Cross (summit of Dundroich, or Druid's Hill), Peebles-shire, 6½ miles N. by E. of Peebles,	1,970
Bowbeat Hill, Edinburghshire, 9 miles SSE. of the village of Pennycuik,	2,096
Blakeup-Scars, 8 miles SE. by S. of Pennycuik,	2,193
Tod's Cairns, Edinburghshire, 9 miles SE. by S. of Pennycuik, about	2,000
Lammermoor Hills,—	
Soutra Hill, Haddingtonshire, 11 miles SSW. of Haddington, } about	1,700
Lammer Law, Haddingtonshire and Berwickshire, 8 miles S. of Haddington, }	
Dirrington Law, Berwickshire, 5½ miles W. by N. of Dunse, about	1,260
Mainslaughter Law, Berwickshire, 8½ miles NW. by W. of Dunse,	1,260
Spartleton Hill (highest peak of the Lammermoors), Haddingtonshire, 10½ miles SE. of Haddington, above	1,700
Dunse Law, Berwickshire, on the N. of Dunse,	630
Cockburn Law, Berwickshire, 4 miles N. by W. of Dunse,	900
Grant's Inn, parish of Coldingham, Berwickshire (summit level of a proposed railway between Edinburgh and Newcastle),	370
Meagle, or *Meg Hills* (trapean and detached), Selkirkshire, 2 miles W. of Galashiels,	1,480
Eildon Hills (trapean and detached), Roxburghshire, 1 mile S. of Melrose,	1,364

NORTHERN AND WESTERN CHAIN OF ENGLAND,—

Northern Range,—	
Hedgehope, Northumberland,	2,347
Summit level of Newcastle and Carlisle Railway, 49 miles W. of Newcastle,	*446
Kilhope Law, Durham, 17 miles W. by N. of Wolsingham,	2,196
Cross-Fell, Cumberland, 11 miles SSE. of Penrith,	2,909
High Pike, Cumberland, 8 miles NNE. of Keswick,	2,101
Skiddaw, Cumberland, 3 miles N. of Keswick,	3,022
Saddleback, Cumberland, 5 miles NE. of Keswick,	2,787
Helvellyn, Cumberland, 7 miles SE. of Keswick,	3,055
Pillar, Cumberland, 9 miles SW. by S. of Keswick,	2,893
Sca-Fell, Cumberland, 11 miles S. by W. of Keswick, { High point, / Low point,	3,166 / 3,092
Bow-Fell, Cumberland, 10 miles S. of Keswick,	2,911
Black-Comb, Cumberland, 23 miles SSW. of Keswick,	1,919
Nine Standards, Westmoreland, 13 miles SE. of Appleby,	2,136
Grassmere-Fell, Westmoreland, 16 miles NW. of Kendal,	2,756
Whernside or *Wharnside*, in Ingleton-Fell, Yorkshire, West Riding, 13 miles NNW. of Settle,	2,384
Ingleborough, Yorkshire, W. R., 8 miles NW. by N. of Settle,	2,361
Pennigant Hill, Yorkshire, W. R., 6 miles N. by E. of Settle,	2,270
Whernside, in Kettlewell Dale, Yorkshire, W. R., 13 miles NE. of Settle,	2,263
Romald's or *Rumble's Moor Hills*, Yorkshire, W. R., between Skipton and Otley, highest point	1,308
Boulsworth Hill, Yorkshire, W. R., 10 miles NW. of Halifax,	1,689
Summit level of Great North of England Railway, 20 miles S. of Newcastle,	*324
——— Stockton and Darlington Railway,	†583
Pen Hill, Yorkshire,	2,215
Water Crag, Yorkshire,	2,186
Coniston-Fell, Lancashire, 8 miles N. of Ulverstone,	2,577
Pendle Hill, Lancashire, 10 miles E. of Lancaster,	1,803
Bleasdale Forest, Lancashire, 13 miles N. by E. of Preston,	1,709
Boulsworth Hill, Lancashire, 8 miles ENE. of Burnley,	1,689
Rivington Hill, Lancashire, 5 miles NW. by W. of Bolton,	1,345
Whittle Hill, Lancashire,	1,614
Summit level of North Union Railway, 10⅔ miles S. of Preston,	285
——— Liverpool and Manchester Railway,	215
Town of Rochdale, summit level of Manchester and Leeds Railway,	476
Summit level of Leeds and Selby Railway,	‡242
——— Hull and Selby Railway,	‡70
Lord's Seat, Yorkshire, W. R., SW. of Sheffield,	1,715
Holm Moss, Derbyshire, bordering on Cheshire and the W. R. of Yorkshire,	1,859
Kinderscant, Derbyshire, 11 miles N. by E. of Buxton,	1,800
Axedge Peak, Derbyshire, near Buxton,	1,753
Summit level of Cromford and High Peak Railway,	1,290
——— North Midland Counties Railway, 17¾ miles N. of Derby,	380
——— Grand Junction Railway at Wolverhampton,	414
Town of Birmingham,	365
Summit level of Midland Counties Railway, 5½ miles N. of Rugby, Warwickshire,	404
Town of Nottingham,	94
Summit level of Leicester and Swannington Canal,	561

* Above high-water in River Tyne. † Above low-water in River Tees.
‡ Above high-water in River Humber.

	Feet.
NORTHERN AND WESTERN CHAIN OF ENGLAND (continued),—	
Cambrian Range,—	
Penmaen-Mawr, Caernarvonshire, a little to the SW. of Conway,	1,540
Caern-y-David, Caernarvonshire, near the source of the Ogwen,	3,427
Caern-y-Llewellyn, 13 miles E. of Caernarvon,	3,469
Snowdon, Caernarvonshire, 10 miles SE. of Caernarvon,	3,571
Bulch-Mawr, Caernarvonshire,	1,673
Gerryn-Goch, Caernarvonshire,	1,723
Rivel, Caernarvonshire,	1,866
Moel-Fammau, Denbighshire, 15 miles N. of Llangollen,	1,845
Cairn-y-Brain, Denbighshire, 5 miles N. by W. of Llangollen,	1,857
Moel-Morwith, Denbighshire, 5 miles NW. of Llangollen,	1,767
Cader-Ferwyn, Merionethshire, 7 miles E. of Bala,	2,563
Arran-Fowdy, Merionethshire, 8 miles SSW. of Bala,	2,955
Arranig, Merionethshire, 10 miles SW. of Bala,	2,809
Cader-Idris, Merionethshire, 5 miles SW. of Dolgelly,	2,914
Pengarn, Merionethshire,	1,510
Lladinam, Montgomeryshire, 2 miles NE. of Llanidoes,	1,898
Plynlimmon (principal summit of the *Cerri Hills*), Montgomeryshire and Cardiganshire, 13 miles ESE. of Aberystwith,	2,463
Tregarron Down, Cardiganshire, 5 miles NE. of Tregarron,	1,747
Precella Top, Pembrokeshire, 14 miles NE. of Haverdford West,	1,754
Black Mountains, summit on the borders of Caernarvonshire and Brecknockshire,	2,859
Cappellante Mount, Brecknockshire, 8 miles SW. of Brecon,	2,394
Beacons of Brecknock, Brecknockshire, 4 miles SSW. of Brecon,	2,862
Cradle Mountain, 6 miles ENE. of Brecon,	2,545
Duggan, Brecknockshire, near Builth,	2,071
Llangeinor, Glamorganshire,	1,859
Hatteral Hills,	?
Malvern Hills, highest summit,	1,444
Summit level of Birmingham and Gloucester Railway,	529
Coltswold Hills,	?
Radnor Forest, Radnorshire, N. of New Radnor,	2,163
Longmount Forest, Shropshire, 12 miles SW. by S. of Shrewsbury,	1,674
Devonian Range,—	
Trevose Head, Cornwall,	274
St. Agnes Beacon, Cornwall,	621
Brown Willy, Cornwall,	1,368
St. Stephen's Down, Cornwall,	605
Kit Hill, Cornwall,	1,067
Cawsand Beacon, a granite eminence, Devonshire,	1,792
Rippon Tor (High Tor?), Devonshire, 2 miles S. of Oakhhampton,	1,549
Furland, Devonshire, near Dartmouth,	589
Dunkery Beacon, Somersetshire, 24 miles WNW. of Taunton,	1,668
Summit level of the Bristol and Exeter Railway, about 21 miles from Exeter,	*340
RANGES IN THE SOUTH AND SOUTH-EAST OF ENGLAND,—	
Inkpin Beacon, Hampshire,	1,011
Butser Hill, Hampshire,	917
Portsdown, Hampshire, near Southampton,	447
Motteston Down, Isle of Wight,	698
Dunnose Head, Isle of Wight,	792
Summit level of London and Southampton Railway, about 10 miles NNE. of Winchester,	†394
Ditchelling Beacon, Sussex, 7 miles N. of Brighton,	858
Firle Beacon, Sussex, 5 miles SE. by E. of Lewes,	820
Crowborough Hill, Sussex, 7 miles NNE. of Uckfield,	804
Beachy Head, Sussex,	564
Fairlight Down, Sussex, 2½ miles ENE. of Hastings,	599
Folkstone Turnpike, Kent,	575
Hollingsbourn Hill, Kent, 6 miles E. by S. of Maidstone,	616
Shooter's Hill, Kent, 1½ miles S. of Woolwich,	446
Greenwich Observatory, Kent,	214
Norwood, Surrey, 5 miles S. of London,	389
Hindhead, Surrey,	923
Leith Hill, Surrey,	993
Summit level of Great Western (London and Bristol) Railway, near the River Thames at Moulsworth Bridge, Berks,	226
Summit level of London and Birmingham Railway, near Tring, Hertfordshire,	390
Highbeech, Essex,	750
MOUNTAINS OF IRELAND,—	
Monavullagh (Commergh Mountains), Waterford, N. Lat. 52° 10′, W. Long. 7° 32′,	2,598
Sheehy, Cork, N. Lat. 51° 45′, W. Long. 9° 7′,	1,796
Mount Gabriel, Cork, N. Lat. 51° 30′, W. Long. 9° 29′,	1,335
Hungry Hill, Cork, N. Lat. 51° 41′, W. Long. 9° 44′,	2,248
Cahirfarna, Cork,	2,234
The Paps, Kerry, N. Lat. 52° 1′, W. Long. 9° 14′	2,280
Mangerton, Kerry, N. Lat. 51° 59′, W. Long. 9° 28′,	2,754
Gurrane Tual (Magillicuddy Reeks), Kerry,	3,404
Brandon, Kerry, N. Lat. 52° 15′, W. Long. 10° 15′,	3,120
Seefin, Limerick, N. Lat. 52° 19′, W. Long. 8° 28′,	1,706
Knockmeledown Mountains, Tipperary, probably	2,700
Galtymore (Galtee Mountains) Tipperary, N. Lat. 52, 22′, W. Long. 8° 4′,	3,008
River Suir, above Cahir,	152
Multeen River, about 6 miles N. of Tipperary,	324
Slievenaman, Tipperary, N. Lat. 52° 25′, W. Long. 7° 30′,	2,362
Devil's Bit, Tipperary, N. Lat. 52° 50′, W. Long. 7° 50′,	1,572
Keeper, Tipperary, N. Lat. 52° 45′, W. Long. 8° 12′,	2,265
Slieve Bloom Mountains, Queen's County,	1,689

* Above Floating Harbour, Bristol. † Above high-water in the River Thames.

MOUNTAINS OF IRELAND (continued),—	Feet.
Callawn, Clare, N. Lat. 52° 53′, W. Long. 9° 15′,	1,288
Knockaness, Clare,	1,305
Craig, Clare,	1,715
Lough Derg,	98
Twelve Pins, Galway (highest summit), N. Lat. 53° 31′, W. Long. 9° 48′,	2,396
Beinnocoire, Galway,	2,337
Muilrea, Mayo, N. Lat. 53° 37′, W. Long. 9° 47′,	2,680
Croaghpatrick, Mayo, N. Lat. 53° 47′, W. Long. 9° 38,	2,499
Croghan, Mayo, on the W. side of Achil Island,	2,250
Slievemore, Mayo, on the S. side of Achil Island,	2,184
Cliffs to the E. of Achil Head,	900
Cliffs to the N. of Achil Head,	1,800
Nephin, Mayo, N. Lat. 54° 3′, W. Long. 9° 18′,	2,639
Slievebon (South), Roscommon,	857
Slievebon (North), Roseommon. N. Lat. 53° 44′, W. Long. 8°,	839
Carnclonhugh, or *Cairn-a-Clanhugh*, Longford, N. Lat. 53° 47′, W. Long. 7° 42′,	942
Slievanierin, Leitrim, N. Lat. 54° 5′, W. Long. 7° 56′,	1,922
Lackagh, Leitrim,	1,448
Truskmore, Sligo,	2,113
Benbulbin, Sligo, N. Lat. 54° 21′, W. Long. 8° 19′,	1,697
Cuilcagh, Cavan, N. Lat. 54° 12′, W. Long. 7° 47′,	2,188
Belmore, Fermanagh,	1,312
Carnmore, Fermanagh,	1,034
Slievelcague, Donegal, N. Lat. 54° 38′, W. Long. 8° 43′,	1,965
Cliffs to the N. of Rossan Point, the SW. extremity of Donegal,	750
Bluestack, Donegal, N. Lat. 54° 45′, W. Long. 8° 4,	2,213
Errigal, Donegal, N. Lat. 55°, 3′, W. Long. 8° 5′,	2,462
Muckish, Donegal, N. Lat. 55° 6′, W. Long. 7° 59′	2,190
Slievesnaght, Donegal, N. Lat. 55° 12′, W. Long. 7 18′,	2,019
Sawell (Carntogher Mountains), Londonderry, N. Lat. 54° 50′, W. Long. 7°,	2,236
Benbradagh, Londonderry, N. Lat. 54° 48′, W. Long. 6° 45′,	1,530
Carntogher, Londonderry, N. Lat. 54° 52′, W. Long. 6° 39′,	1,521
Slievegallion, Londonderry, N. Lat. 54° 45′, W. Long. 6° 45′,	1,730
Knocklayde, Antrim, N. Lat. 55° 10′, W. Long. 6° 47′,	1,685
Benmore, or *Fair Head*, the NE. point of Antrim,	626
Throstan, Antrim, N. Lat. 55° 3, W. Long. 6° 10′,	1,810
Slemish, Antrim, N. Lat. 54° 53′, W. Long. 6° 7′,	1,437
Divis, Antrim, N. Lat. 54° 37′, W. Long. 6° 3′,	1,568
Loch Neagh,	48
Slievecroob, Down, N. Lat. 54° 19′, W. Long. 5° 58′,	1,755
Slievbingian, Down,	2,449
Slievedonard (Mourne Mountains), Down, N. Lat. 54° 11′, W. Long. 5° 55′	2,796
Eagle Mountain (Mourne Mountains), Down, N. Lat. 54° 8′, W. Long. 6° 7′,	2,084
Slievegullion, Armagh, N. Lat. 54° 7′, W. Long. 6° 24′,	1,893
Carlingford, Louth, N. Lat. 54° 3′, W. Long. 6′ 12′,	1,935
Hill of Howth, Dublin County, on the N. side of the entrance to Dublin Bay,	549
Bray Head, Wicklow,	807
Kippure, Wicklow, N. Lat. 53° 11′, W. Long. 6° 19′,	2,473
Great Sugar Loaf, Wicklow, N. Lat. 53° 9′, W. Long. 6° 8′,	1,651
Lugnaquilla, Wicklow, N. Lat. 52° 57′, W. Long. 6°, 30′,	3,039
Bog of Allen, Kildare, source of the Boyne and Little Barrow rivers, highest point	300
Summit level of the Grand Canal which passes through the Bog of Allen,	275
River Nore, below Castleton,	324
Mount Leinster, Carlow, N. Lat. 52° 38′, W. Long. 6° 43′,	2,604
Brandon, Kilkenny, N. Lat. 52° 29′, W. Long. 6° 58′,	1,696
*Summits and other Levels of Proposed Railways.**	
Main Trunk Line—(Dublin to Holycross),—	
Terminus at Dublin,	43
Level at Miltown, beyond the Bog of Allen, Kildare county,	293
Maryborough summit, Queen's County (at junction of line from Kilkenny),	345
Summit level, bog near Borros-in-Ossory, Queen's County,	400
Holycross, Tipperary,	307
Shannon line—(Holycross to Tarbert),—	
Multeen river, Tipperary,	324
Junction of line from Waterford and Clonmel, at Donaghill, near town of Tipperary,	309
Town of Limerick,	41
Terminus at Tarbert Bay, mouth of the river Shannon,	10
Cork line—(Holycross to Cork),—	
Crossing of the line from Limerick to Waterford, between Cashel and Cahir,	268
Summit level near Ballyhillogue, 13½ from Cork,	400
Terminus at Cork Barracks,	200
Cork Harbour,	30
Beerhaven line—(Blarney to Beerhaven,)—	
Level at Blarney, Cork county,	236
Summit level, Pass of Cummineer, near the head of Bantry Bay, Cork,	469
Terminus at Beerhaven, on the N. side of the entrance to Bantry Bay,	22
Limerick and Waterford line—(Tipperary to Clonmel),—	
Summit level, Donaghill, near Tipperary, at the junction of the line from Dublin to Limerick,	309
Level near Clonmel,	104
Kilkenny line—(from Maryborough summit to Kilkenny),—	
Maryborough summit at Ross Bog (see Main Trunk line),	345
Terminus at Kilkenny Barracks,	169
Dublin and Armagh line,—	
Terminus at Dublin,	106
Summit level at Castleblaney, Monachan,	409
Terminus at Armagh city,	170

* The heights are above the top of a 12-foot tide in Dublin Bay.

MOUNTAINS OF IRELAND (continued),—	Feet.
Navan and Inniskillen line,—	
Navan level, at junction with Dublin and Armagh line,	167
Summit level, between Virginia and Cavan, Cavan county,	400
Terminus at Inniskillen, Fermanagh,	195
SUMMITS IN THE WESTERN AND NORTHERN ISLAND GROUPS,—	
North Berule, Isle of Man, 11 miles N. of Douglas,	1,804
Snea-Fell, Isle of Man, 9 miles N. of Douglas,	2,004
Goat-Fell, Island of Arran, Buteshire, ¾ mile NW. by N. of Brodick,	2,865
Paps of Jura, Island of Jura, Argyllshire, { South summit, / North summit,	2,359 / 2,470
Benmore, Island of Mull, Argyllshire,	3,168
Cuchullin, Isle of Sky, Inverness-shire,	2,995
Sea-cliffs on the SW. coast of Sky,	750
Highest point of the *Mainland*, or principal *Barra Isle*, Inverness-shire,	2,100
Highest point of *Mingala Isle*,	900
——— *Sandera Isle*, } Barra Isles, Inverness-shire,	780
——— *Muldonich Isle*, }	600
Mount Heckla, Island of South Uist, Inverness-shire,	2,940
Mount Heval, in the SE. of North Uist, Inverness-shire,	2,010
Roneval, in the S. of Harris, Inverness-shire,	2,200
Conachan, Island of St. Kilda, Inverness-shire,	1,380
Clisseval, in the S. of Lewis, Ross-shire,	2,700
Suaneval, in the SW. of Lewis,	2,700
Highest point of *Scarpa Isle*, off the SW. point of Lewis,	990
——— *Hoy Island*, Orkney Isles,	1,590
——— *Fair Isle*, between the Orkney and the Shetland groups,	708
Mount Rona, in the N. of Mainland Isle, Shetland Islands,	1,470
Highest point of Foula Island, off the W. coast of Mainland, Shetlands,	1,350
Slatterind, Stromöe Island, Færoe Isles,	2,998

AÇORIAN OR WESTERN SYSTEM. — This little insular system includes all the mountains in the islands which form the group of the Açores or Azores. These islands are by many geographers included among the African; but in this work we have deemed it proper, following the example of M. Balbi, to consider the group as a political and geographical dependency of Portugal.* The culminating points of this system are the *Grand Pico* in the island of Pico, the altitude of which is 8,057 feet, and the *Pico de Vara* in the island of St. Miguel which reaches an elevation of 5,326 feet.

BOREAL SYSTEM. — A name under which we propose to include the mountains found in the Spitzbergen group of islands. The principal culminating points, and their respective heights, are,— *Black Point*, 4,495 feet, and *Mount Parnassus*, 3,951 feet, both in the main island called Spitzbergen or New Friesland, and the *Honberg*, 4,399 feet, in Charles Island.

Induced by a consideration of the importance of orographic details in enabling us to comprehend the general aspect of a region or country, and the circumstances which regulate or modify its climate and productions, we have thus at great length, and with some degree of minuteness, described the various European mountain ranges. The heights stated in the preceding tables are all reckoned from the *level of the sea*. To have given the name of the authority for each statement, would have merely incumbered the pages of a work like the present, without producing any adequate counterbalancing advantages.

TABLE-LANDS OR PLATEAUX. — Some of these elevated tracts of land have been mentioned in the preceding section. The most considerable in point of extent is the table-land of *central Russia*; but its elevation is not great, since, even in the neighbourhood of the source of the Volga, it does not attain a greater height than from 1100 to 1150 feet. Then follow the table-land of *central Spain*, about 2200 feet in height; the table-land of *Switzerland*, between the Alps and the Jura mountains, 2240 feet; that of *Auvergne*, 2300 feet; of *Piedmont*, from 640 to 1900 feet; of *Jura*, from 1700 to 1900 feet; of *Bavaria*, 1660 feet; and that of *Thuringia* from 640 to 770 feet.

VOLCANOES.—There is only one active volcano on the continent of Europe, namely *Vesuvius* or *Monte Vesuvio*, near Naples; but as a considerable warmth is still felt at the bottom of the crater of *Monte Nuovo*, in the Bay of Baia to the west of Naples, a mountain which was thrown up by an irruption in the year 1530, the latter may still be considered a recent volcano. The islands of Europe contain several; the principal of which are *Ætna* or *Mongibello*, in Sicily, and *Stromboli*, *Vulcano*, and *Vulcanello*, in the group of the Lipari Islands. Stromboli is the least elevated known volcano, and is singularly interesting from the permanency of its phenomena. The little island, *Ferdinandine*, which was thrown up by an eruption near the coast of Sicily in 1833, had only a short existence of a few months duration. *Ischia*, off the coast of Naples, has been in a quiescent state since the 14th century; but hot springs and sulphureous vapours still rise from many points of the surface of the island. *Santorini*, in the Grecian Archipelago, was in a state of eruption in the year 1707, and numerous smaller islands and rocks have been at different periods

* See foot-note to p. 137.

thrown up in the vicinity of the principal island. *Milo*, though the epochs of its eruptions are unknown, is a volcano of recent aspect, emitting sulphureous and amoniacal vapours from its central crater, and streams of boiling water from several points. The *Açores* are uniformly of volcanic constitution. Numerous sub-marine volcanoes exist in their vicinity, whose eruptions have in some instances produced new islands, such as the island which appeared in 1720 between Terceira and St. Miguel, and that which in 1811 was seen by the captain of the Sabrina frigate, forming at a little distance from the latter island. The cone of the latter was elevated 300 feet above the sea, and contained a crater 500 feet in diameter. These islands being solely composed of fragmentary ejections, have since gradually yielded to the action of the waves and currents, and become shoals below the water level. But the great volcanoes of the Açores are those of *Pico* and *St. George*, in the islands of the same names. The former broke out in eruption in 1718, but has been tranquil ever since. *Saryteheff*, in the north island of Nova Zembla, is the most northern of all the volcanoes presently known.*

VALLEYS and PLAINS. — The valleys of Europe are naturally less extensive than those of Asia, Africa, and America. The two largest are the valley of the *Lower Danube*, comprehending the plains of Wallachia and Bulgaria, and the valley of the *Middle Danube*, which forms the kingdom of Hungary. The magnificent valley of the *Pô* ranks third in point of size. Those of the *Rhine* between Bâle and Mentz, of the *Upper Rhône* in Switzerland, of the *Drave* in Carinthia, are remarkable for their extent and beauty. The valleys of *Norway* and of *Scotland* present the peculiar feature of a long and narrow basin, frequently containing a lake of a corresponding shape. Of the other valleys which the mountainous regions of Europe present to our view, we may mention the fine valleys of *Savoy*, *Bresein*, *Bergamo*, and *Tyrol* in the Austrian empire; those of the cantons of *Berne*, *Tessin*, *Uri*, &c. in Switzerland; of *Arragon*, *Catalonia*, *Navarre*, and *Granada*, in Spain; of *Beira* and *Tras-os-Montes*, in Portugal; of *Dauphiny*, the *Upper* and *Lower Pyrenees*, the *Eastern Pyrenees*, and *Ariège* in France. But the most remarkable plain of Europe is that level tract which extends from the shores of the German Ocean to the Ural mountains and the Caspian Sea, and comprehends the Netherlands, Northern Germany, Prussia, Poland, and the greater part of Russia, rising nowhere more than a few hundred feet above the level of the sea.

DESERTS, STEPPES, and LANDES.—Although Europe presents no tract of any considerable extent that may properly be called a desert, yet infertile plains, for the most part sandy, occur in several places. These are known by the name of *landes* in France, *steppes* in Russia, *putvens* in Hungary, &c. The most extensive are found in Russia, which presents among many others the *Steppe of Ryn*, between the Volga and the Oural; the *Steppe of the Oural*, between that river and the Don; the *Steppe of the Crimea*, and the *Steppe of Petchora*. Next to the steppes of Russia, the most remarkable tracts of a similar description occur in Norway and Sweden, especially in *Norland*, *Lapland*, and *Wester Gothland*. There are several in the Austrian dominions, especially in *Hungary*, where they are very extensive. They occur also in the neighbourhood of *Stade*, *Hanover*, *Luneburg*, and *Zell*, in the kingdom of Hanover; at *Hamburg*; and in *Pomerania* in Prussia; and they occupy the greater portion of the surface of the departments of the *Landes* and the *Gironde* in France. Similar tracts are found in the Neapolitan province of *Terra di Bari*.

CLIMATE. — Did the temperature of Europe depend merely on the action of the solar rays, England would be as cold as Poland, and France as Germany. To the south of the 45th parallel, the progression of the heat would be rapid, and its relaxing effects felt in an extreme degree at Constantinople, Naples, and especially at Madrid. Three great physical causes, however, concur in modifying the results of the astronomical climate. These are, 1*st*, The *cold* or *diminution of temperature* produced by the vicinity of northern Asia in all the countries exposed to the chilling winds which come from the polar sea across the frozen plains and mountains of Siberia; 2*d*, The *heat* produced by the vicinity of Africa in those countries which, lying nearest that portion of the world, feel in a greater degree than others more remote, the influence of the hot winds proceeding from its burning deserts; 3*d*, The *sudden changes produced in the temperature* of the countries of Europe which slope towards the Atlantic Ocean and its branches, by the winds which sweep over that

* Messrs. Scrope and Daubeny on Volcanoes; Balbi's Abrégé, &c.

wide expanse of water. Taking these three general causes in combination with the direction of the mountain chains, and the exposure and elevation of the soil, we are enabled to recognise in Europe *three general climates*, which may be represented by the three sides of a triangle, having its three points resting upon Cape St. Vincent in Portugal, North Cape in Finmark, and the northern shore of the Caspian. The line between Cape St. Vincent and North Cape may be named the *Oceanic side* of this triangle; that which unites North Cape to the northern extremity of the Caspian, the *Asiatic side*, and the remaining line between the Caspian and Cape St. Vincent, the *Southern side*. In winter the temperature diminishes as we proceed from south to north along the oceanic side, while on the southern side its decrease is (with a few irregularities arising from local causes) from west to east. In winter the degree of cold remains nearly the same throughout the length of the Asiatic side. The warmth of summer is regulated by other general laws. Throughout all the northern region it is augmented by the length of the days, although on the oceanic side this increase of heat is moderated by the influence of the uniform temperature of the sea. On the Asiatic side the summer heat is felt to be oppressive, especially when contrasted with the rigorous cold experienced during the winter. On the southern or Mediterranean side of the triangle the summer heat varies in a singular manner, according to the winds and other local causes, but the temperature generally diminishes as we proceed eastward.

Europe may also be divided into three parallel zones, which, making allowance for the influence of the causes we have already mentioned, will indicate, in a manner sufficiently accurate, the limits of the principal variations of climate experienced in this portion of the world. The *southern zone* or *climate* extends from latitude 35° to 45°. Within the space which it comprehends, the cold is slight and of short duration. The spring commences in January or February, the summer in April or May, and the winter lasts during October and November; so that the year is divided into three seasons, namely, an agreeable spring, a summer, the heat of which reaches 106°, and the south of France, all belong to this region. The *middle zone*, or *temperate* and a winter, short and invariably rainy. Greece, southern Turkey, Italy, Spain, *climate*, is included between lat. 45° and 55°. The spring of this zone commences in March or April; the summer, the temperature of which reaches 90°, lasts from June to September; and the winter commences in November. Thus, four seasons of unequal duration are experienced in the temperate zone. The winter is the longest, and the autumn the shortest of the seasons. Two thirds of France, the whole of Germany, and the half of European Turkey, are under the influence of this climate. The *northern climate* extends over the remaining portion of the regions of Europe. From the latitude 55° to 65°, the winter augments in rigour and duration, and beyond the Polar circle the cold becomes so intense as the year advances, that mercury is reduced to a solid state in the month of September. In the northern portion of this zone, the severities of a long winter (lighted up, however, by the magnificent spectacle of the aurora borealis, the splendour of which replaces the presence of the solar luminary,) are succeeded by a hot summer of three months' duration, in the course of which the sun never sinks below the horizon. There are two subdivisions of this zone: The first includes Denmark, European Russia from Moscow to the White Sea, and the greater part of Sweden and Norway; the second comprehends the north-eastern portions of Russia, the whole of Russian and Swedish Lapland, and the northern portion of Norway. As the climates of the islands require a separate consideration, their places will be found in our special descriptions.

We shall conclude this brief statement by a few remarks on the humidity and mean temperature of certain parts of Europe.

The *humidity of the atmosphere* divides Europe into regions, the characters of which are not less distinctly marked than those derived from temperature. According to the estimate of Professor Schow, the quantity of rain which falls annually to the north of the Alps is equal to 26 inches, while to the south of that chain the quantity is 37 inches.* A statement of this kind, however, can only be but approximate; and besides, we must take into account that a greater quantity of snow falls to the north than to the south of the Alps. It has also been remarked, that in the northern region the number of rainy days is from 150 to 160 annually, while in the south their amount is only from 90 to 100. It may be useful to present in a single table the results of some observations which have been made relatively to the quantity of rain that falls during the year in the principal countries of Europe.

* Parallèle du nord et du midi de l'Europe, par M. Schow.

		Engl. In.
SWEDEN	Upsal,	16.92
RUSSIA	St. Petersburg,	18.11
ENGLAND	London,	22.7
	Manchester,	33.07
	Liverpool,	33.85
	Dover,	37.4
	Keswick,	67.
SCOTLAND	Edinburgh,	22.
	Glasgow,	22.32
HOLLAND	Utrecht,	28.74
	Leyden,	31.49
GERMANY	Wurtemberg,	17.71
SWITZERLAND	Zurich,	33.85
	Geneva,	51.18
FRANCE	Lisle,	29.92
	Metz,	26.37
	Caen,	21.65
	Evreux,	21.65
FRANCE	Paris,	21.26
	Colmar,	29.92
	Rennes,	22.44
	Lyons,	33.07
	Limoges,	29.16
	Grenoble,	34.25
	Montpellier,	29.92
ITALY	Milan,	37.
	Venice,	31.89
	Padua,	39.76
	Tolmezzo (Friuli),	86.61
	Pisa,	48.82
	Genoa,	55.11
	Rome,	21.26
	Naples,	37.49
	Confugnana (Apennines),	97.24
SPAIN	Carsagnana,	98.07

To the north of the Alps, the *mean temperature* varies from 47° to 50° Fahr., and in northern Europe it is lower in the east than in the west. Thus, at St. Petersburg the mean temperature is 38° or 39°, while at Upsal it is about 42°. The *difference between the temperature of summer and winter* is, in the neighbourhood of the Aretic Ocean, 55°, in Tuscany it is only 29°, and at Palermo, 20°. In the latter city, the temperature rises only about 6° from April till May, while at Upsal it rises 9° in the same interval.

MINERALS. — The European mines of gold, silver, and precious stones, are but few in number, and limited in produce; but, on the other hand, this portion of the globe is enriched by an almost inexhaustible supply of iron, lead, copper, tin, coal, and salt. To these we may add the produce of its mines of quicksilver, without the aid of which, the gold and silver mines of the new world, wrought during the 17th and 18th centuries, and early portion of the 19th, could not have obtained their high importance and value. In the following tabular view of the principal mineral productions of Europe, M. Balbi has endeavoured, in reference to each article, to state the countries in which it is found in the order of the comparative extent of their mineral wealth.

Mineralogical Table of Europe.

DIAMONDS: — *Russia* — Government of Perm.

OTHER PRECIOUS STONES: — *Austria* — Bohemia, Hungary, and Transylvania; *Saxony*.

GOLD: — *Russia* — Governments of Perm and Orenburg; *Austria* — Transylvania, Hungary, Saltzburg, &c.; *Sardinia* — Piedmont, &c.

SILVER: — *Austria* — Hungary, the Bannat, Bohemia, Transylvania, &c.; *Saxony* — Erzgebirge; *Hanover* — Harz; *Turkey* — Macedonia, Albania, Bosnia, &c.; *Prussia* — Provinces of Saxony, Rhine, &c.; *England*—Cumberland, Derbyshire, Flintshire, &c.; *France*—Finistere, Lozère, and Vosges; *Sweden and Norway*—Buskerud, in Norway,—Westeras and Stora-Kopparberg, in Sweden; *Nassau*; *Sardinia* — Savoy.

TIN: — *England* — Cornwall and Devonshire; *Saxony*; *Austria* — Bohemia.

QUICKSILVER: — *Spain* — Mancha; *Austria* — Carniola, &c.; *Bavaria* — Rhine, &c.

COPPER: — *Great Britain and Ireland*—Cornwall, Anglesea, and Devonshire, in England,—Cork and Waterford, in Ireland; *Russia*—Perm, &c.; *Austria*—Hungary, the Bannat, the Bellunese, Styria, &c.; *Sweden and Norway*—Sondre-Trondheim, in Norway,—Stora-Kopparberg, Lindkoping, and Westeras, in Sweden; *Turkey* — Macedonia, &c.; *Prussia* — Rhine, &c.; *Spain*—Andalusia, &c.; *France*—Rhône, Upper Rhine, and Lower Pyrenees; *Hanover*, *&c.*

IRON: — *Great Britain*—South Wales, Staffordshire, Shropshire, Yorkshire, &c. in England,—Lanarkshire, &c. in Scotland; *Russia*—Perm, Orenburg, Tambov, Nishnei-Novgorod, Kalouga, Olonetz, Viatka, &c.; *France* — Upper Marne, Côte-d'Or, Meuse, Nièvre, Upper Saône, Moselle, Meurthe, Ardennes, Doubs, Jura, Ariège, &c.; *Prussia* — Silesia, Rhine, Brandenburg, &c.; *Sweden and Norway* — Orebro, Stora-Kopparberg, Carlstad, Jeffleborg, Westeras, Jonkoping, Upsal, &c. in Sweden,—Smaalehnene and Laurwig, in Norway; *Austria*—Styria, Carinthia, Hungary, the Bannat, Bohemia, Transylvania, government of Milan, &c.; *Tuscany*—Island of Elba; *Spain*—Catalonia, Aragon, Navarre, Biscay, Asturias, Granada, &c.; *Turkey*—Bulgaria, Bosnia, and Macedonia; *Bavaria*; *Sardinia* — Piedmont, &c.; *Nassau*, &c.

LEAD: — *Spain* — Granada, Andalusia, Catalonia, &c.; *Great Britain and Ireland* — Denbighshire, Flintshire, Cumberland, Northumberland, Yorkshire, Derbyshire, in England,—Lanarkshire and Dumfries-shire, in Scotland, — Wicklow, Clare, Wexford, Armagh, and Donegal, in Ireland; *Austria* — Carinthia, Hungary, Bohemia, &c.; *Prussia* — Silesia, Rhine, &c.; *Hanover*; *France* — Finistère, &c.; *Nassau*; *Saxony*; *Sardinia* — Savoy, Island of Sardinia, &c.

ZINC: — *England*; *Belgium*; *Prussia* — Silesia; *Austria* — Carinthia.

COAL: — *Great Britain and Ireland* — South Wales, Northumberland, Durham, Yorkshire, Derbyshire, Lancashire, Cumberland, Flintshire, &c. in England and Wales,—Lanarkshire, Midlothian, Fifeshire, &c. in Scotland,—Tyrone, Antrim, Leitrim, Kilkenny, Cork, &c. in Ireland; *Belgium* — Mons, Namur, Liège, &c.; *France* — Nord, Loire, Upper Loire, Calvados, &c.; *Prussia* — Silesia, Westphalia, Rhine, &c.; *Austria* — Bohemia, Hungary, Lower Austria, Styria, Moravia, &c.

SALT (rock-salt, and that derived from brine-springs and the sea): — *Russia*—Saratow, Perm, Taurida, Astrakhan, Bessarabia, &c.; *Austria* — East Hungary, Upper Austria, with Saltzburg, Tyrol, Venice, Dalmatia, Triest, &c.; *France* — Charente-Inferieure, Meurthe, Jura, Loire-Inférieure, Vendée, Garde, &c.; *Spain* — Catalonia, Granada, Navarre, Seville, Valencia, Iviça, &c.; *Great Britain and Ireland* — Cheshire, Worcestershire, Staffordshire, Norfolk, Kent, Fifeshire, the Lothians, Munster, Ulster, &c.; *Portugal* — Setubal, Lisbon, Figueira, &c.; *Prussia* — Saxony, Westphalia, Pomerania, &c.; *Principalities of Wallachia and Moldavia*; *Sardinia* — Island of Sardinia and Genoa; *the Two Sicilies* — Calabria, &c.; *Bavaria* — Isar, &c.; *Papal States* — Forli, &c.; *Sweden and Norway* — Smaeland, Bohus, &c. in Sweden,—Tonsberg, &c. in Norway; *Ionian Isles* — Santa-Maura, &c.; — *Greece* — Island of Naxos, &c.

At the commencement of this century, America produced eleven times the quantity of silver at present derived from the mines of Europe; and the quantity of gold which it yielded was also much greater than that which Europe then produced. Since that period the produce of the American gold mines has somewhat diminished in quantity, and it is now less than that derived from the mines of Europe in their present extended state. Russia alone, since the recent discovery of new minerals of gold and platina in the Ourals, produces six-sevenths of the whole quantity of gold produced in Europe. Hungary and Transylvania yield nearly the remaining seventh. England, which is so rich in the common metals, produces but an insignificant quantity of those of a precious description. England furnishes nearly a third part of the whole quantity of iron made in Europe. Of the remainder, about a fourth part is made in Russia, a fifth in France, and a tenth in Sweden. The iron of Russia and Sweden is very superior in quality, and well adapted for the fabrication of steel. England and France produce iron of various qualities, from the best to the most inferior. The iron, for ordinary purposes, made in England, has long been noted for its cheapness; but the best descriptions of English iron bring prices nearly as high as the finest Swedish. Five-sixths of the total quantity of cast-iron consumed in Europe, for the fabrication of machinery of all kinds, culinary utensils, &c. comes from the iron manufactories of Britain; about a tenth only from those of France, and a fortieth from the founderies of Prussia. Very few castings are made in Russia and Sweden. It is remarkable that the produce of the iron mines, notwithstanding the slight intrinsic value of the metal, represents more than three-fourths of the value of the produce of the European mines of every description, and that the produce of the gold, silver, and platina mines only a ninth part of that value. One half of the lead consumed in Europe has been (at least until lately) brought from Spain, and three-sevenths from England. France, and even Germany, produce, in proportion to their extent, but little of this metal. England produces ten times as much coal as France, and about a half more than the quantity produced in the latter is yielded by the mines of Belgium and Prussia.. About twelve-thirteenths of the European tin is derived from English mines. England also furnishes nearly a half of the copper produced in Europe; about a fifth of the total quantity is procured from the Russian mines, and a tenth from those of Sweden. In France, copper is found only in trifling quantities.

VEGETATION. — Referring our readers to the first section of the fourth chapter of this work (see *anté*, p. 88,) for an explanation of the natural causes which regulate generally the geographical distribution of vegetables, we proceed to give, although very briefly, considering the extent and importance of the subject, some account of the vegetable productions of this portion of the globe.

The triangle of climates proposed by Malte-Brun, of which we have given an explanation in the preceding section but one, will assist us in distributing the vegetable productions of Europe into three great series. Proceeding northward along the oceanic side of the triangle, we find, from Cape St. Vincent in Portugal, as far as Cape Finisterre in Spain, a vegetation springing up beyond the sandy *landes*, which presents at once to the botanist a great number of plants analogous to those found in the Açores, and others of American origin, taking so kindly to the soil of these coasts, and multiplying with so much facility, as to invade extensive tracts to the exclusion of the indigenous vegetation. Beyond latitude 40°, the orange, olive, and vine, occupy the lower regions, and are overlooked by the oak and chesnut. From Cape Finisterre to the south-eastern extremity of the Bay of Biscay, and even to the source of the Adour, the narrow plains extending to the foot of the Pyrenees are characterised by the absence of the cistus, or rock-rose, and the rose-laurel, the difficulty of rearing the orange, olive, and vine, and the ease with which the culture of the apple is extended. These peculiar features of the vegetation of this region have induced a French naturalist to name it the *Normandy* of the Spanish peninsula From the point of the Bay of Biscay now mentioned, the coast, as far as the mouth of the Loire, is still bordered with the maritime pine. The vines growing on the banks of the Gironde yield excellent wines, and the myrtle grows in the open fields. The melon, which calls for so much attention in the neighbourhood of Paris, scarcely requires culture on the shores of the Atlantic and of the Channel. From the mouths of the Meuse, as far as those of the Ems, lint and madder are successfully cultivated; and the ash, alder, and birch, thrive on the Danish coast. In Norway several species of poplar disappear in approaching the 60th parallel, and the oak about two degrees farther north, but the beech and the lime are prolonged as far as the 63d parallel, from which point to latitude 67° they are replaced by the pine and fir. At the 70th parallel, barley and oats are the only kinds of grain which resist the rigour of the climate.

The farther we remove from the coast, the influences which bring about the gradations we have remarked in the oceanic region are diminished. On the Asiatic side of the triangle, several plants which grow in high northern latitudes on the side of the ocean disappear in the plains of Russia, though farther south. On the other hand, plants common to the Scandinavian peninsula and Lapland are propagated on the shores of the Baltic. Thus the rein-deer lichen is frequently met with in the plains under latitude 54°. The oak and hazel cross the 60th parallel only in small groups and in favourable situations. The ash extends only as far as the 62d degree. Oaks are thinly distributed over the central provinces of Russia, but they thrive in descending towards the 52d parallel, and under the 55th are both numerous and beautiful. The beech known in Livonia disappears in the vicinity of Smolensk, and to the south of Moscow the lime and birch are the most common trees. The birch predominates in the forests which cover the inferior declivities of the Oural chain, and in the higher region the pine or the fir. In the plains are seen the elm, lime, maple, service, and plum-tree.

On approaching the shores of the Caspian, the influence of the climate of northern Asia ceases. In the Ukraine grain of every description thrives, there is an abundance of fruit trees, the mulberry succeeds in small plantations, and the forests furnish choice oaks for naval purposes. At length, towards the Don, and near the mouth of the Volga, large trees disappear, and tufts of shrubs and saline plants cover the sandy plains.

The base of the triangle of European climates presents several remarkable peculiarities, which we shall now examine, proceeding for that purpose from east to west. Towards the mouth of the Danube the low hills are covered with the apple, pear, cherry, plum, and apricot. In Wallachia these fruit trees appear in entire forests. They overleap the chain of the Balkan, and ornament some of the high hills of Roumelia, ancient Macedonia, and Albania. As far as the 40th parallel the olive and orange are found only on the sea-shore, but the mountains are crowned with varied forests, where the pine, fir, cedar, oak, beech, walnut, chesnut, maple, sycamore, and oriental plane, occur in succession. To the south of the 40th parallel, vegetation assumes another aspect; the apple and pear disappear, and are replaced by the olive, orange, fig, and black mulberry, which mingle their foliage with the scarlet blossoms of the pomegranate, and their sweet exhalations with those of the myrtle and jasmine. On the shores of the narrow strait of Constantinople some northern vegetables grow side by side with others belonging to the south. The vines of Salonika yield excellent wine, and aromatic plants in vast variety still furnish the bees of Attica with the juices which in ancient times conferred such celebrity on their honey. The valleys and shores of Albania present a great analogy to the most temperate portion of Italy. Before the rivers are dried up by the heat of summer, the valleys situate below the forests of resinous trees which cover the chain of Pindus, are seen ornamented with clusters of elder-bushes, and the meadows are overspread with the violet, narcissus, and hyacinth. An enchanting spectacle is presented by the southern region of Italy. The forests of olive, almond, and fig-trees, the majestic cypresses, and the golden fruits of the orange and citron, disclose a new aspect of nature. The shores of the basin formed by the coasts of Tuscany, Genoa, Nice, and the southern shores of France, present a magnificent amphithcatre, ornamented with four zones of vegetation. In the lowest zone, which rises about 330 feet above the level of the Mediterranean, we notice first the glass-wort or soda plant, sea cryngo and echinophora, or prickly samphire, then the Bourbon-palm, the tree-tithymal or spurge, the three-grained cneorum or widow-wail, and the silky lotus or bird's foot trefoil. The second zone produces the rose-laurel, orange-trees of every species, the plane, and the European lotus, while at the foot of those trees, jasmines, pomegranates, jonquilles, and tuberous plants unite their splendid blossoms and delightful perfumes. The third zone is occupied by the olive, fig-tree, vine, laurel, and arbutus or strawberry-tree. Lastly, in the fourth zone, towards the summits of the mountains, are found only the carob-tree, cistus, pine, and rosemary shrub, the last growing spontaneously in the fissures of the rocks. On the eastern slopes of the Spanish peninsula we again meet with the vegetation of Greece and Italy; the olive thrives as far as Cape Palos, the carob and mastick trees are seen growing in company, the laurel, fig, pomegranate, and mulberry display their varied foliage, and the vine yields a strong and highly coloured wine. A region, which may be denominated African, extends between Cape Palos and Cape St. Vincent. In the vicinity of the Mediterranean and the Atlantic, it is characterised by the dwarf-palm, cactus, and banana; while a more elevated zone comprehends a vegetation akin to that of Italy, surmounted by the vine, and lastly by forests of resinous trees.

ANIMALS.—The animal kingdom in Europe is less varied than the vegetable. The same animals may be considered common to the southern and north-east regions of our continent. The white bear and the blue fox appear from time to time on the shores of the frozen sea. The rein-deer is found at the sixty-first parallel in Scandinavia, and six or seven degrees lower in Russia. The lemming (*Marinda lemnus*) continues its migrations in straight lines from east to west, between the fifty-fifth and sixty-fifth parallels; the glutton is observed in the same region. The elk is generally found below the polar circle; it frequents Lithuania, and even some parts of Prussia. The Arabian sheep, which is common to the same countries, is distinguished by the form of its horns and the coarseness of its wool.

The naked plains that bound the sea of Azof and the Caspian are frequented by some animals common to Asia. The Bactrian camel pastures in these lands, rich in saline herbs; the Circassian sheep are observed near the Oca and the Dneiper. The Tartars have brought to that part of Europe their fleet horses, and the fierce jackal has migrated thither in quest of prey.

The strongest horses and oxen are found in the great and verdant plains which extend from the Ukraine and Moldavia to Denmark and Flanders. These animals have probably existed a long time in a wild state. The *urus* or the our-ochs (words which signify literally ancient or primitive oxen) are still occasionally seen in Poland. In these regions, and in the whole of central Europe, there is a breed of sheep originally the same as that in Spain and in England; which have been improved in different countries by natural or artificial causes. The ass, which cannot be considered indigenous to the mean European zone, has been brought to it, and has degenerated.

The wild goat, the chamois, and the marmot, frequent the great mountainous chains of Europe — the Alps, the Pyrenees, the Cevennes, the Carpathians, and Hemus.

The animals that are found in the mean zone are for the most part common to the south. The ox and the horse in Italy, if they be well fed, are as stout as any in the Ukraine or in Holstein. The Arab horse was brought into the south during the invasions of the Moors and the Turks; and from it have perhaps sprung the Andalusian and other varieties; but it is not unlikely, from observations which have been made, that the Andalusian breed is the same as the *norbagge* or small Norwegian horse; and consequently that both of them are descended from a common stock, and one in all probability indigenous to Europe. It is still less doubtful that the buffalo, an

animal not found in the north of Hungary, has been imported from Asia to southern Europe. A particular species of sheep in Sardinia, and another (the *strepsiceros*) in Candia, are supposed to be indigenous to Europe. If the ass in the southern part of the continent be not so too, it has been introduced from Asia Minor and Syria.

As the briefest enumeration of the birds, reptiles, fishes, and above all the multitudinous insects of Europe, would far exceed the limits of a work like the present, our readers must rest satisfied with such incidental notices of these animal tribes as may find a place in our special descriptions of the countries in this portion of the globe.

POPULATION. — According to M. Balbi, the population of Europe, within the limits we have already described (see *anté*, p. 157), is 227,000,000 souls. Estimating the surface of Europe at 3,710,000 English square miles, this population is in a proportion of 61 inhabitants to each square mile.

It has been remarked by Malte-Brun, that in the two great regions of Europe, viz. the western and the eastern, each portion, taken as a whole, is more populous the farther it lies to the south.* Thus, in the first of these two great divisions, the population of the northern portion is less than that of the central, and the population of the latter than that of the southern. In the second, the same difference will be observed, if we divide Russia into two portions; and then, for the purpose of establishing similar comparisons, combine the northern and central portions of western Europe. In regard to the latter, we will find the population of the united portions, to be 111 to the square mile, and that of the southern portion to be 211 to the same extent of surface. In eastern Europe, the number of inhabitants to the square mile, will be found to be 26 in the northern portion, and 45 in the southern. Thus the proportions in both regions may be considered nearly analogous. Another cause regulating density of population may be noticed. If we compare the different states with one another, we shall generally find that those which possess many islands, and widely extended coasts, have a greater command of the means of subsistence than others which lie embosomed in the land. Thus it happens that Britain and Holland, both of which are divided by natural or artificial channels into numerous islands, are, in proportion to the extent of their territory, the most populous of the European states. From the same cause population is more dense in France than in Austria, in the kingdom of Naples than in that of Sardinia, and in the Ionian Isles than in Turkey.

PEOPLE AND LANGUAGES. — The primitive history of Europe is enveloped in such obscurity, that it would be in vain to attempt to arrange its confused elements. Of all the nations of which the European family is composed, Greece appears to have been the most anciently civilized — an advantage for which it was indebted to the Phœnicians and Egyptians, the most enlightened of the nations which inhabited those portions of Asia and Africa bordering on the Mediterranean. The Greeks on their part planted colonies in Gaul and Italy; but, until Rome became the seat of a vast power, the nations of central Europe presented a character of imperfect civilization, not far removed from barbarism, analogous to that which characterised the aboriginal tribes of America, at the period when the Europeans first carried to the new continent their vices along with their religious creeds. The Romans, after having brought the Celts and Germans under subjection to their empire, were in their turn pressed at home on every side by the Scandinavian and Sarmatian nations, whose attacks they had often repulsed in the most savage regions, and were forced to yield after a lengthened resistance. Other tribes following the footsteps of these invaders, issued from the north and east, and overthrew the rising kingdoms which the latter had founded on the ruins of the Roman power. Thus, after the *Heruli*, a Scythian people from the countries of the Finns on the shores of the Baltic, had, under the guidance of their leader Odoacer, overturned the throne of the west, they were driven from Italy by the Scandinavian tribes, so well known under the name of *Ostrogoths* (East-Goths); and the latter in their turn gave way to the Slavonian race of the *Longobardi* or Lombards. The *Visigoths* (West-Goths), driven from Gaul by the *Istævenos*, a German tribe, since called Franks, settled in Spain along with the *Vandali*, another Slavonian nation. In like manner, the Saxons, Angles, and Jutes took possession of Britain. These invading tribes, far inferior in numbers to the nations in the midst of which they placed themselves, contributed to alter the languages of the latter, and to modify the manners and customs established by the Romans; but they wrought no change on the distinguishing characteristics of the inhabitants of central, western, and southern Europe. This consideration explains how it is that we still recognise among the modern nations the portrait of their ancestors described by ancient authors.

* See *Table of the Geographical and Political Divisions of Europe*, p. 176.

According to Malte-Brun, exclusive of the inhabitants of the Caucasus, ten distinct races exist still in Europe, but the most ancient are on the whole the least numerous.

The *Iono-Hellenic* or *Greek* race, of whom the Pelasgi were a very ancient branch, if not one of the original stocks, after having peopled with their colonies many portions of the Mediterranean coasts, now exist only in Turkey, in the new kingdom of Hellas, or Greece, and the Ionian Isles. Their language, which is sprung from the ancient Greek, is by a singular anomaly called the *Romaic*.

The *Albanians* are the descendants of the Illyrians, who mingled formerly with the Pelasgic, and at a later period with the modern Greeks; enough of their ancient language remains to enable us to discover its European character, and its connexion with the German and Slavonic. No trace is left of the ancient people that are supposed to have inhabited Thrace and the countries adjacent to the Danube; they were probably composed of different races, as the Phrygian, the Slavonic, the Celtic, and the Pelasgic. It is towards Thrace, Mount Hæmus, and the Lower Danube, that we can discover the earliest origin of European states; but these indications disappear if we traverse Asia Minor, or travel by the north round the Euxine Sea.

The *Turks* belong to the same family as the Tartars, and are scattered throughout Russia from the Crimea to Kazan; one of their colonies is established in Lithuania. The Turkomans, of whom a branch is settled in Macedonia, have preserved incorrupted traces of their Asiatic origin.

Two great races, the *Slavonians* and *Finns*, have occupied from the earliest dawn of history all the countries comprehended under the vague and chimerical names of Scythia and Sarmatia. Almost all the topographical names of these countries are derived from the Slavonic and Finnic; a very small number owe their origin to the short empires of the Scythians, the Sarmatians, the Ostrogoths, and the Huns, the successive conquerors and rulers of these immense plains. It is probable that a Scythian nation, sprung from the Medes, ruled over the Finns and Slavonians, who formed the agricultural and pastoral tribes. The Sarmatians, who appear to have been of Tartar descent, mixed with the Scythians and their vassals; the Huns were another horde of the same people; both the one and the other came from the banks of the Volga and the shores of the Caspian Sea. It is certain that, at the time in which they appeared in these countries, the banks of the Vistula and the Dneiper were peopled by Slavonic and Finnic tribes. The Slavonic nations are divided, according to their dialects, into three branches: first, the *eastern Slavi*, including the Russians (a people descended from the Roxelans or Roxolani), the Slavi and Scandinavians, the Rousniacs in Galicia, the Servians or Slavi on the Danube, the Sclavonians, the Croatians and others; secondly, the *western Slavi*, or the Poles, Bohemians, Hungarian Slavi, and the Sorabs or Serbs of Lusatia; thirdly, the *northern Slavi*, or the Venedes of the Romans, the Wends of the ancient Scandinavians, a very numerous tribe, earlier civilized, but at the same time earlier incorporated in different states than the other two. The same tribe comprehends the remains of the German Wendes or Polabes, the Obotrites and Rugians, long since confounded with their conquerors the Germans; it also includes the Pomeranians, the Kassubs, subdued by the Poles; the ancient Prussians or Prutzi, exterminated or reduced to slavery by their Teutonic conquerors; and lastly, the Lithuanians, the only branch which has retained some traces of its ancient language, although mixed with the Scandinavian and Finnic.

The *Wallachians*, in the ancient Dacia and the adjacent countries, are the descendants of the Getæ, the Slavi, and the Romans; their language resembles the Latin. The *Bulgarians* are a Tartar tribe, that migrated from the neighbourhood of Kazan, and mingled with the Slavi on the Danube, and partly adopted their language.

The *Finns* wandered probably from time immemorial in the plains of eastern Europe. Some of their tribes having mixed with other nations, were included by the Greeks among the European Scythians. Their descendants were subdued and driven to the north and the east by the numerous hordes of Slavonians. It is probable that the branches of the Finnic race are the Laplanders, who are also perhaps connected with the Huns, the *Esthes*, or ancient Esthonians and Livonians; the Permians incorporated with the Scandinavians, particularly the Norwegians, Hungarians or Magyars, who were composed of Finnic and Turkish tribes, and governed by Persians or Bucharians. Such are considered the ramifications of the Finnic race, or as it is called in Russia, the *Tschoude*. There are without doubt many reasons that may induce some to regard the Hungarians as a separate branch.

The *Samoiedes*, the *Siriaines*, the *Mordvates*, and other tribes, appear to have been wandering hordes that migrated from Asia.

The *Teutonic* nations, of which the most important are the Germans, the Scandinavians, and the English, are situated to the west of the Slavonians and Finns, in the western and central regions of Europe. The Germans, on account of their different dialects, the High and the Low Deutsch, may be divided into two classes; the inhabitants of the mountains on the south, and those of the plains on the north. The Saxon, or language of Franconia and of the higher orders in Livonia and Esthonia, is intermediate between these dialects.

The *Scandinavian* nations, or the Swedes, Goths, Norwegians, Danes, and Jutlanders, form a distinct race from the German nations, and were separated from them at a remote period. Still, however, there is some resemblance between them and the Dutch, the Frieslanders, and the low Saxons. All that remains of the ancient Scandinavian, as it was spoken in the ninth century, is retained in the Dalecarlian, the old Norwegian of the valleys of Dofre, in the dialect of the Faröe islands, and the Norse, the language of the Shetland islanders. Two others, or rather modern dialects, the Swedish and the Danish, are both of them branches of the ancient Scandinavian. A third dialect, that of Jutland, retains the marks of the old Anglo-Saxon, which has some affinity with the ancient Scandinavian.

The *English* and the *Lowland Scots* are sprung from Belgians, Saxons, Anglo-Saxons, Jutes, and Scandinavians. Their different dialects, united and modified, formed the old English, or the *Anglo-Dano-Saxon*. The dialects presently spoken in Suffolk, Yorkshire, and in the low counties of Scotland, bear a stronger resemblance than the English to the Teutonic tongues.

In regard to the *ancient people of the south and west*, no distinct trace remains of the Etruscans, the Ausonians, the Osci, and other indigenous states, or such at least as were anciently settled in Italy. The words Celts and Iberians are no longer used in France, Spain, and Britain; but under other denominations we may discover the descendants of these great and ancient nations.

The *Basques*, confined to the western base of the Pyrenees, still retain one of the most original languages in our part of the world; it has been proved that it is a branch of the Iberian, which was spoken in eastern and southern Spain, and was common also in Aquitanian Gaul.

The *Celts*, one of the primitive European races, were most widely scattered in different countries. The *Hibernians*, or native *Irish*, are an old branch of this people; and according to some authors, the *Highlanders of Scotland* are a colony of the native Irish. The *Erse* or Gaelic is the only authentic monument of the Celtic language.

Belgium was at one period inhabited by Celts and Germans, but it may be proved that the earlier inhabitants were of Celtic origin. The *Belgians* conquered part of England and Ireland, and mingled with the native Celts, but were afterwards subdued by the Anglo-Saxons of Wales, Cumberland, and Cornwall; from these districts they returned to the continent, and peopled lower Brittany. The *Gaulois* or Gaulic that is still spoken, is derived from the Belgian, which is very different from the Celtic, and the more modern dialect of lower Brittany is composed of several others; the Gauls

called their language the Cumraigh or the Kymri, and the Latin authors of the middle ages denominated the people Cambrians; some geographical writers have incorrectly styled them Cimbres.

Such are the three native and ancient races of Western Europe. The *language of the Romans*, particularly the popular dialect, or *Romana rustica*, came gradually into use in different countries; it was thus mixed with native languages, and gave rise to provincial idioms. The purer Latin was spoken in the towns and churches. The irruption of the northern states, all of them, or almost all of them, of Teutonic origin, introduced new confusion and new idioms into the Latino-Gallic and Latino-Iberian dialects; the language of the Troubadours, of which the seeds had been sown in a very remote age, appeared about the same time in western Europe. From it emanated the Italian, the Lombard, Venetian and Sicilian dialects, and also the *Provençal*, the *Oc* or Occitanian, the Limosin and Catalonian. The old French and some of its dialects, as the Walloon and that of Picardy, must have existed for many centuries before the French name was known; to the same source must be attributed the modern Spanish, or the Castilian and Gallician.

We are entitled to conclude, from this imperfect account of the ancient European languages, that the three most populous races were the Romano-Celtic in the south and west; the Teutonic in the centre, the north and north-west; and the Slavonic in the east.

The Greek, the Albanian, the Turkish, and the Finnic languages in the east; the Basque, the Celtic or *Erse*, and the Gaulic or Kymric, however interesting to the philologist, are considered secondary by the political arithmetician. These seven languages are not spoken by more than twenty-five or twenty-seven millions in Europe, whilst the three great races comprise the rest of the European population.

Europe reckons amongst its inhabitants the descendants of Arabians, who are found mostly in Spain, Malta, and Candia; in the last of which they are distinguished by the name of *Abadiotes*. There are also two tribes of Kalmuks, who lead a wandering life between the Volga and the Don. We may likewise mention the *Jews* that are dispersed throughout Europe, and the *Zigeunes* or *gypsies*, an ancient Indian tribe or race.

M. Balbi, in the following table, has arranged the existing inhabitants of Europe into twenty principal *stocks* or *families*, of which seven are strictly European, in the ordinary acceptation of the word, and thirteen of Asiatic origin, although now found within the boundaries of Europe as presently recognised.

Table exhibiting the Classification of the People of Europe according to their Languages.

IBERIAN or BASQUE FAMILY: — The *Escualdunac*, better known by the name of *Bascongados* or *Basques*, in Spain and France.

CELTIC FAMILY: — The *descendants of the true Celts*, in Ireland, the Highlands of Scotland, and in the Isle of Man; the *Cymri* (Kimri) or *Welsh*, in Wales; and the *Breyzad* or *Low-Bretons*, in France.

THRACO-PELASGIC or GRECO-LATIN FAMILY: — The *Schypetars* or *Skipatars*, better known under the names of *Albanians* and *Arnauts;* the *Greeks*, in the new state of Greece, European Turkey, &c.; the *Romance people*, subdivided into Catalonians, Valencians, and Majorcans, in Spain, — Languedocians, Provençals, Dauphinese, Lyonnaise, Auvergnats, Limousins, and Gascons, in France,—Savoyards, in Savoy,—and Rhætians, &c. &c. in a portion of the cantons of the Grisons and the Valais, in Switzerland; the *Italians*, in Italy; the *French*, in France, north of the Loire, in the Netherlands, and in Switzerland; the *Spaniards*, in the greater part of Spain; the *Portuguese*, in Portugal and the Açores; and the *Rumanje* or *Roumouni*, better known under the name of *Wallachians*, in Austria, Turkey, and Russia.

GERMANIC FAMILY: — The *Deutsch of Upper Germany*, subdivided into Swabians, Bavarians, Austrians, Franconians, Upper-Saxons, &c. &c.; with whom may be ranked the Germans of Switzerland, Bohemia, Moravia, Silesia, Hungary, Transylvania, Livonia, Courland, Esthonia, &c. &c.; the *Deutsch of Lower Germany*, principally the Westphalians, the Saxons of Lower Saxony, the inhabitants of the northern portion of the circle of Upper Saxony, and the Prussians properly so called, or the German inhabitants of the two provinces of Prussia; the *Friesianders*, in Germany, Denmark, and Holland; the *Netherlanders* or *Batavians*, principally the Dutch in Holland, and Flemings in Belgium; the *Norwegians*, in Norway, part of Sweden, and in the Shetland and Faröe Islands; the *Swedes*, in Sweden, the towns of Finland, &c. &c.; the *Danes*, in Denmark, and the towns of Norway and Jutland; and the *English*, in England, the greater part of Scotland, and in part of Ireland and Wales.

SLAVONIC FAMILY: — The *Illyrians*, in Austria and Turkey, among whom we principally note the Servians, Bosnians, Dalmatians, and Bulgarians; the *Russians*, in Russia, and under the name of *Rousniacs*, in Gallicia, Hungary, and other parts of Austria, and in the largest portion of the Russian governments of Volhynia and Podolia; the *Croatians*, the *Windes* or *Wendes*, and the *Bohemians* or *Tchekes*, in Austria; the *Poles*, in the existing kingdom of Poland, republic of Cracow, a large portion of the former Polish provinces which now belong to Prussia and Austria, and in part of Silesia; the *Serbes*, in the kingdom of Saxony, and in Prussia; the *Lithuanians*, in the Russian governments of Wilna, Grodno, Minsk, Vitepsk, Smolensk, &c. &c., and in the Prussian government of Gumbinen; and the *Lettes* or *Lotwa*, in the greater part of the Russian governments of Mittau and Riga, and in a small portion of the province of Eastern Prussia.

OURALIAN, FINNISH, or TCHOUDE FAMILY: — The *Suomi* or *Finns*, in the grand-duchy of Finland, and a portion of the Russian governments of Olonetz and St. Petersburg; the *Esthonians*, in the governments of Revel and Riga; the *Sames* or *Laplanders*, in the northern portion of Russia and Sweden; the *Mari* or *Tcheremisses*, in the Russian governments of Kazan, Simbirsk, Viatka, Perm, and Orenburg; the *Mordeva*, in the governments of Penza, Kazan, Viatka, Saratov, Simbirsk, and Orenburg; the *Komi* or *Komi-Mourt*, better known under the names of *Zyraines* and *Permians*, in the governments of Perm, Viatka, Vologda, and Arkhangelsk; the *Oudi*, *Oudi-Mourt*, or *Votiacs*, in the governments of Viatka, Orenburgh, and Kazan; the *Mansi*, *Mansi-Koum*, or *Vogoules*, in the governments of Saratov and Perm, and in the upper valleys of the Oural; and the *Magyarock* or *Magyars*, better known under the name of *Hungarians*, in Hungary and Transylvania.

SAMOIEDE FAMILY: — The *Kassovo* or *Samoiedes*, in the Russian government of Arkhangelsk.

TURKISH FAMILY: — The *Osmanlee* or *Ottomans*, better known under the name of *Turks* — the dominant nation in the Ottoman empire; the *Baskirs*, in the Russian governments of Perm and Orenburg; the *Tchouwaches*, in the governments of Kazan, Viatka, Simbirsk, and Orenburg; the *Meschtchereks*, in that of Orenburg; the *Uroukes* or *Turkomans* of Macedonia in Turkey, and the *Turkomans* of the Russian Caucasian provinces, among the latter of which we principally note the *Nogai*, *Koumuks*, *Basians*, &c. &c.; lastly the alleged *pure Tartars* mentioned by Russian and German authors, but who are only the descendants of the genuine Turks that composed the

greater part of the army of the Tartar conqueror Batou: they live in the governments of Kazan, Simbirsk, Penza, Saratov, Astrakhan, and Orenburg.

Tartar or Mogul Family: — The *Kalmuks*, in the Russian governments of Astrakhan, Simbirsk, Orenburg, and the province of the Caucasus.

Aware Family: — The *Awares*, *Agdi*, and *Didoethi* or *Dido-Unso*.

Kaszi-Koumuk Family: — The *Kaszi-Koumuks*.

Akoucha Family: — The *Akouchas*.

Koura Family: — This people (the *Kouras*), as well as the Akouchas, Kaszi-Koumuks, and Awares, inhabit the mountains of the Caucasian region, and are known under the collective name of *Lesghis* or *Mountaineers*.

Mitsdjeghi Family: — The *Mitsdjeghi*, named *Tchetchenzi* by the Russians, inhabit the upper valleys of the mountainous countries in the Caucasian provinces: among them we principally note the *Golgai* or *Ingousches*, *Karaboulaks*, &c. &c.

Persian Family: — The *Irons* or *Ossetes*, in the upper valleys of the mountainous countries of the Caucasian region; and the *Boukhares*, settled in several of the trading towns in the south-east of Russia.

Circassian Family: — The *Adighé* or *Adekhes* or *Adeches* or *Circassians*, in the mountainous countries of the Caucasian region.

Abassian Family: — The *Absne* or *Abassians*, in Little Abassia, and in the mountainous countries of the Caucasian region.

Semitic Family: — The *Jews*, spread over all the countries of Europe, with the exception of Norway, Spain, and Portugal, but who are found in greatest numbers in Poland, Turkey, Austria, and Germany; the *Maltese*, in Malta and the neighbouring islands; and the few *Arabs* found in the Russian provinces of the Caucasus.

Sanscrit or Hindoo Family: — The *Romanny*, *Kola*, or *Sinte*, a wandering people who may be looked on as of Indian origin. They are called *Bohemians* in France, *Zigeuner* in Germany, *Zingari* in Italy, *Gitanos* in Spain, *Gipsies* in England, &c. &c.

Armenian Family: — The *Armenians*, in the trading towns of Turkey, also in some localities in Russia and Austria

Religions. — Christianity in its various forms sheds a benign influence over all the surface of Europe, and is professed by nearly the whole of its numerous inhabitants.

The *Roman Catholic Church* extends its authority over almost the whole of France, Belgium, and Poland, the whole of Italy, Spain, and Portugal, three-fourths of Ireland, the greater part of Austria, nearly one half of the Swiss Confederation, and the secondary states of Germany, and over a fractional portion of the population of Turkey and Holland. The *Greek* or *Eastern Church* is established in Russia, the Ionian Isles, the new state of Greece, and in the three principalities of Servia, Wallachia, and Moldavia. Its doctrines are professed by nearly one half of the inhabitants of European Turkey, and by a large number of the subjects of Austria, especially in Transylvania, Hungary, Croatia, Sclavonia, and Dalmatia.

As we have already pointed out (see *anté*, pp. 120, 121) the principal divisions and subdivisions of the *Protestant Churches*, and shall have an opportunity of giving farther details regarding these in the description of the Germanic Confederation, we shall at present confine ourselves to a few general statements. The *Lutheran Church* is dominant in Prussia, Denmark, Norway, Sweden, Hanover, Saxony, and in Wurtemberg, and other German states. Its doctrines and forms are also adhered to by the inhabitants of the Russian provinces on the Baltic, and by a number of individuals in Austria, especially in Hungary, Transylvania, &c. *Calvinism* prevails principally in Holland, the Swiss cantons of Berne, Zurich, Bâle, &c. &c., in the duchy of Nassau, Electoral Hesse, the principalities of Anhalt, Lippe, and in some of the other German states. Calvinists are numerous in France, Prussia, and Austria, and they form a large majority of the inhabitants of Scotland. The *Anglican* or *English Episcopal Church*, to which the designation of the *Reformed Catholic Church* is sometimes applied, is established in England and Ireland; but in point of political rights and privileges, churchmen and dissenters are in both countries placed nearly on an equal footing.

It may be remarked with sufficient correctness, that the Roman Catholic, Protestant, and Greek Churches, constitute three great religious and geographical divisions of Europe, since the first prevails in the southern, the second in the northern, and the last in the eastern countries.

Besides these three great ecclesiastical divisions of Christian Europe, there are some minor religious communities, separated from the general mass; such as the *Methodists* in Britain and Ireland; the *Mennonites* or *Baptists* in Britain, Holland, Prussia, Russia, and Germany; the *Socinians* in Transylvania, and the *Unitarians* in England; the *Quakers* in England and the Netherlands; the *Armenians* in Turkey; and several other sects, to some of which we have alluded in our 122d page.

That portion of the population of Europe which does not include professors of Christianity, may be classed under four religions, viz. 1. *Islam*, the dominant religion in the Ottoman empire, and professed by all the Turkish population of Russia, mentioned in the two preceding pages; — 2. *Judaism*, professed by the Jews spread over Europe; — 3. *Lamism* (see *anté*, p. 125), or the religion professed by the wandering

hordes of Kalmuks in Russia; — 4. Lastly, *Idolatry*, which is to be found only among the Mitsdjeghi, Ossetes, Tchouvaches, Mordwa, Samoiedes, Laplanders, and other barbarous tribes inhabiting the regions of the Caucasus and Oural, and the northern solitudes of Arkhangelsk and Finmark.

Government and Political Divisions. — The several states of Europe present every possible form of government, from the extreme of absolute despotism to that of pure democracy; but in general it may be possible to reduce these forms of government into three principal classes, namely, *autocracies* or *absolute monarchies*, *limited* or *constitutional monarchies*, and *republics*. Each of these three classes, however, presents shades of character which are highly embarrassing; and there are even some states which cannot be brought under a rigorous classification, as sometimes a portion of the territory may belong to one class, and another portion to a second. Thus, while the government of continental Sardinia is conducted under the forms of an absolute monarchy, that of the island portion of the kingdom is constitutional. Other monarchies, again, like that of Prussia, exhibit shades of character so very delicate, that they may with equal propriety be placed either in the first or in the second class. We reserve our farther remarks on these points for our special descriptions, which will include some account of the leading features of the respective governments of the different European states.

According to the latest treaties which regulate the policy of Europe, five principal countries, namely, *Russia*, *England*, *France*, *Austria*, and *Prussia*, are, in the order we have now recited them, placed at the head of the European states. The question of *precedency*, however, is extremely complicated, and is open to the influence of many modifying circumstances. Thus, while in relation to military preponderance, none of the other European states can rival Russia, Britain on the other hand surpasses them all in maritime strength. France, in manufacturing industry and territorial wealth, yields only to Britain; and if its military force numerically is inferior to that of Austria, its extent of coast and its navy place it far above the latter. Least in point of political importance probably stand the little principalities of *Lichtenstein* and *Monaco*, and the seigniory or lordship of *Kniphausen*, the last of which, with its little territory of 17 square miles, containing 2859 inhabitants, and contributing a contingent of 20 men to the army of the Germanic Confederation.

According to M. Balbi, the existing political divisions of Europe comprehend three *empires*, one *elective ecclesiastical monarchy*, sixteen *kingdoms*, seven *grand-duchies*, one *electorate*, twelve *duchies*, seventeen *principalities*, one *landgraviat*, one *lordship*, and thirty-one *republics*, — in all, ninety independent states.*

It is difficult to determine how to arrange the political divisions of Europe so as to combine them with its great geographical divisions. The following is the method proposed by M. Balbi: —

Western Europe — Subdivided into —

1. *Central Portion* — Comprehending the *Austrian Empire*, the kingdoms of *France*, *Prussia*, *Holland*, and *Belgium*, and the *Swiss* and *Germanic Confederations*.
2. *Southern Portion* — Comprehending the kingdoms of *Portugal and Spain*, and the republic of *Andorra*, in the Spanish Peninsula; the nine states of Italy, viz. the *States of the Church*, the kingdoms of *Sardinia* and the *Two Sicilies*, the grand-duchy of *Tuscany*, the duchies of *Parma*, *Modena*, and *Lucca*, the principality of *Monaco*, and the republic of *San Marino*. — Note. — The remaining portion of Italy, namely, the Lombard-Venetian kingdom, and the islands of Corsica and Malta, belong, respectively, to Austria, France, and Britain.
3. *Northern Portion* — Comprehending the kingdoms of *Great Britain and Ireland*, *Sweden and Norway*, and *Denmark*.

Eastern Europe — Comprehending the *Russian* and *Ottoman* empires, the republics of *Cracow* and the *Ionian Isles*, the new kingdom of *Greece*, and the principalities of *Servia*, *Wallachia*, and *Moldavia*.

Considerations of expediency, akin to those which have led M. Balbi, in spite of the proposed methodical arrangement now quoted, to commence the special description of the European countries given in his "Abrégé de Geographie," with the kingdom of France, induce us, in the following pages, to notice first in order the United Kingdom of Great Britain and Ireland.

* See M. Balbi's "Abrégé," &c. p. 104. In his *Tableau Statistique de l'Europe*, only 11 duchies, 15 principalities, and 30 republics, are named.

GREAT BRITAIN AND IRELAND.

The United Kingdom of Great Britain and Ireland, is situate between 49° 57′ 30″ and 69° 49′ north latitude; and between 1° 46′ east and 10° 27′ west longitude. It consists of a numerous group of islands, two of which greatly exceed the others in extent and importance, viz. Great Britain and Ireland. Great Britain is politically divided into two countries, which originally formed separate kingdoms, and are still governed by different laws, viz. England and Scotland. Ireland is likewise to the same extent a distinct kingdom; for, though it has been subject to the Crown of England since the eleventh century, it nevertheless continued to possess an independent legislature till its union with Great Britain in 1801, and still enjoys the form of a separate government, administered by a Viceroy or Lord-Lieutenant. These three kingdoms we shall therefore describe in three separate sections:—1. *England and Wales;* 2. *Scotland;* 3. *Ireland.*

§ 1. *England and Wales.*

Astronomical Position.—Between 50° and 55° 50′ north latitude; and 2° east and 5° 40′ west longitude.

Dimensions.—England and Wales form an extensive peninsula, bounded on three sides by the sea, and separated on the north from Scotland by a line which extends obliquely from the NE. angle of the Solway Firth to a point 3 miles N. of the mouth of the Tweed. The *greatest lineal extent* of England is about 367 miles, from the Land's End in Cornwall to the north-east coast of Norfolk; from the coast of Dorsetshire to Berwick-upon-Tweed, measured along the second meridian, W. the length is 362 miles; from the Land's End to North Foreland in Kent, 330 miles; and from St David's Head in Pembroke, to Lowestoft in Suffolk, about 300 miles. Between Lancaster Bay, and Bridlington Bay in Yorkshire, the *breadth* is contracted to 110 miles; and between the head of the Solway Firth and Tynemouth, it is farther diminished to 64. From these measurements, as well as from an inspection of the map, it will be seen that the figure of England is extremely irregular, and approaches pretty nearly to the fanciful representation of the Island given by the Romans, as a woman seated on a rock, the well known Britannia. The *superficial extent* has long been a question of considerable doubt; according to Arrowsmith's map, which is founded upon the Ordnance Survey, it amounts to 57,960 square miles, or 37,094,400 imperial acres; and this is the estimate now adopted in Parliamentary reports.

Boundaries.—*Northern:*—Scotland. *Eastern:*—the German Ocean or North Sea. *Southern:*—the English Channel. *Western:*—St George's Channel and the Irish Sea.

General Aspect.—England is generally a level country. The northern part of the kingdom, comprehending Westmoreland, a considerable part of Cumberland, Lancashire, and Yorkshire, is mountainous; but the southern counties present only a succession of picturesque eminences, which do not reach any considerable elevation, and only serve to diversify the surface of the country. The greater part of the Scottish Border is formed by the Cheviot Hills, a range of considerable height; from the western extremity of which a great longitudinal chain, with an elevation varying from 1200 feet to nearly 3000, extends southward, through Cumberland, Northumberland, Lancashire, and Yorkshire, to the middle of Derbyshire. This chain forms the watershed of the country, and is continuous except at two points, the one where it is nearly intersected by the valleys of the rivers Aire and Ribble, and the other along the line of the Roman wall between Newcastle and Carlisle. Connected with this range, but almost separated from it by the valleys of the Eden and the Lune, is a group of lofty mountains which cover a great part of Westmoreland and Cumberland; where Scawfell, Helvellyn, Skiddaw, and Bowfell rise respectively to 3166, 3055, 3022, and 2911 feet above the level of the sea.

The second great watershed of England is formed by a range of table-land, rising sometimes into hills, and attaining a height of 1500 feet, which extends in a tortuous line through the East Riding of Yorkshire, and the counties of Lincoln, Northampton, Oxford, Gloucester, Somerset, and Dorset, where it terminates at the islands of Portland and Purbeck. It is chiefly composed of oolitic rocks, rising above the lias formation, and presents generally a bold escarpment to the west, with a regular slope towards the east. In Gloucester and Somerset, this range forms the Cotswold,

Mendip, Quantock, and Brendon hills, in the last of which Dunkerry beacon, one of the highest summits in the west of England, rises to the height of 1660 feet above the level of the sea.

The southern and eastern counties are traversed by various ranges of chalk hills, of small elevation, which diverge from Salisbury Plain. One of these extends through Hampshire and Sussex to Beachy head, forming the *South-Downs* of the latter county; a second extends in nearly the same direction, through Hampshire, Surrey, and Kent, and forms the *North-Downs;* while the third and most important range pursues a north-easterly direction, through the counties of Berks, Oxford, Buckingham, Bedford, Cambridge, and Suffolk, and the western part of Norfolk, where it forms the eastern border of the Fens.

The south-western counties of Devon and Cornwall are occupied by mountains of granitic formation, sometimes called the Devonian range, the principal chain of which extends in a south-westerly direction from the vale of Exeter to the Land's End. Wales is occupied by a system of high and rugged mountains, which constitute several groups and chains, and intersect the country in various directions, between the Bristol Channel and the Irish Sea. From this survey it appears that the highest and most rugged part of England is to be found near its western coast, while the principal plains and lowlands slope towards the German Ocean.

Besides the moorlands which occur among the mountains already mentioned, and cover a large portion of their surface, there are several other tracts of that description which are worthy of notice. In the eastern part of the North Riding of Yorkshire, at a considerable elevation above the level of the sea, are the *Eastern moorlands*, which extend about 30 miles in length by 20 in breadth, and consist chiefly of stony hills and peat mosses, with a cold and ungenial climate. There are, however, even in this tract, a number of fertile well-cultivated dales, some of which contain from 5000 to upwards of 10,000 acres. The *moorlands of Staffordshire* occupy the northern part of that county, at an elevation between 500 and 1154 feet, and are of various quality and aspect. *Dartmoor*, in Devonshire, between Exeter and Plymouth, covers a space of from 200,000 to 300,000 acres, at a mean elevation of 1700 feet above the level of the sea. Its surface is characterised by extreme ruggedness; the soil is in many parts covered with fragments of rock, and where free from these is thin and poor. In the highest part of the moor there is a morass of about 80,000 acres, which is, in some places, incapable of supporting the weight of the smallest quadrupeds. In the western part of Somersetshire, but extending also into Devonshire, is *Exmoor*, a tract of about 20,000 acres, of considerable elevation, which is mostly waste and irreclaimable; but produces a small hardy breed of horses, and affords pasture to about 20,000 sheep of a peculiar breed, to which it gives its name. Besides these hilly moorlands, there are also extensive heaths in several parts of England, principally in Surrey, Dorset, and Hants, which consist of exceedingly poor land, and are generally flat and uninteresting.

These ranges of mountains, hills, and moorlands, divide the country into a great many plains and valleys, which are traversed by a corresponding number of rivers, few of which are naturally navigable to any considerable extent. A few of the more interesting of these districts may here be enumerated. The *Vale of York* may justly be regarded as the principal river vale in the island. It extends about 60 miles in length by 15 in breadth, and contains an area of 1000 square miles, or 640,000 acres. *Holderness*, the south-eastern portion of Yorkshire, lying between the Humber and the sea, is a plain with a low but undulating surface, of about 270,000 acres. The city of Carlisle, in Cumberland, is placed in the centre of a large plain of 300,000 acres. The *Vale of the Severn*, one of the most fertile districts in England, extends through Gloucestershire and Worcestershire for about 40 miles. The *Vale of Exeter*, in Devonshire, watered by the Exe and the Otter, contains about 200 square miles, or 128,000 acres. The *Vale of Taunton*, in Somersetshire, covers an area of about 100 square miles, or 64,000 acres of great fertility, producing the finest crops, fruits, and herbage, with a climate peculiarly mild. Between the North and the South Downs is the *Weald of Kent, Surrey, and Sussex*, a tract of generally level land, comprising about 640,000 acres, and extending from Romney Marsh in Kent, to Petworth in Sussex, a distance of 60 or 65 miles, with a breadth of from 8 to 15. The *Fens* form a level tract of above 400,000 acres of very low marshy land, lying around the Wash, principally in Cambridge and Lincoln, but partly also in Northampton, Norfolk, Suffolk, and Huntingdonshire. *Romney Marsh*, in Kent, is connected with the *Welland, Denge*, and *Guildford marshes* in Sussex, which form together a tract of 46,700 acres, the greater part of which is uncommonly rich and productive. The

marshes of Somersetshire are likewise of very considerable extent and importance. They lie along the Bristol Channel, are traversed by the rivers Axe, Brue, and Parret, and in point of fertility are not surpassed by any in the kingdom. *Salisbury Plain*, in Wiltshire, is an oval shaped district of remarkable interest. It extends 22 miles in length from east to west by 15 in breadth, and constitutes an elevated table-land of chalk formation, which has at a distance the appearance of a large plain, but is actually traversed by numerous, and sometimes extensive valleys, and presents almost everywhere a billowy surface. The soil is generally thin and light, and, though in many parts unfit for cultivation, it is covered with a fine green sward that affords excellent pasture for sheep. Adjoining to Salisbury Plain, on the north-east, are *Marlborough Downs*, which exhibit an appearance in all respects similar, except that the surface is more uneven. The general elevation is between 400 and 500 feet. But the largest plain in England is that which extends from the Thames north-eastward through Essex, Suffolk, and Norfolk, comprehending nearly the whole of these counties, with a considerable portion of those that border upon them to the west.

The sea-coast of England presents a very different aspect in different situations, modified according to the character of the country of which it is composed. In some places, as in Cornwall, Kent, part of Norfolk, and Wales, it is high and steep; while in other places it is low, sandy, and marshy; but exhibits on the whole appearances so various as scarcely to admit of being comprehended in a general description. Though partaking much more of a level than of a rugged character, it still differs essentially from the opposite coast of Flanders, Holland, and Friesland, which presents one continued flat for more than 300 miles. The only parts, indeed, of the coast of England, that bear a similar character to any great extent, are Holland, in Lincolnshire, and the coasts of the Wash, in the adjoining counties of Cambridge and Norfolk.

GULFS, BAYS, AND STRAITS. — *On the East coast:* — The *estuaries of the rivers Tyne and Tees*, the former between Northumberland and Durham, the latter between Durham and the North Riding of Yorkshire *Runswick Bay*, *Robin Hood's Bay* *Filey Bay*, and *Bridlington Bay*, on the coast of Yorkshire. The *Humber*, between Yorkshire and Lincolnshire, a large estuary which receives the waters of the numerous rivers that drain the counties of Stafford, Derby, Nottingham, and York. The *Wash*, a large inlet between Lincolnshire and Norfolk, filled with sandbanks, the tops of which are dry at low water, and of which the lower portions are intersected by channels so intricate, that only experienced pilots can navigate them. *Solebay*, off Southwold, in Suffolk. The *estuary of the Stour*, between Suffolk and Essex. The *estuary of the Thames*, between Essex and Kent, obstructed by numerous and extensive sandbanks, among which are several channels passable by the largest ships. *Yarmouth Roads*, off the coast of Norfolk, afford a good anchorage, protected by sandbanks. The *Downs*, at the eastern extremity of Kent, an anchorage sheltered from easterly gales by the Goodwin sands, which scarcely rise above water, and are very dangerous to shipping.

On the South coast: — The *Solent*, *Southampton Water*, and *Spithead*, form together a large navigable strait, between Hampshire and the Isle of Wight. The Solent is in most places about 2 miles wide; but a little to the north of the rocks called the Needles, the western point of the Isle of Wight, it is contracted to less than a mile by a remarkable tongue of land, which is projected from Hampshire. Hurst castle occupies the extremity of this projection, and, owing to the narrowness of the passage, the tide runs through it with such force that it has deepened the channel to 28 fathoms. Southampton Water is a large inlet, stretching upwards of 10 miles into Hampshire, and navigable to its extremity for vessels of considerable burden. Spithead derives its name from a sandbank called the Spit, which extends about 3 miles in a south-east direction from Gosport. It forms an anchorage, protected by the Isle of Wight from all gales from west to south-east, and from the opposite quarters by the high lands of Hampshire. *St. Helen's Road*, off the east end of the Isle of Wight. *Studland Bay*, on the southeast coast of Dorsetshire. *Torbay* and *Start Bay*, on the coast of Devonshire. *Portland Roads*, a good anchorage on the east side of Portland Island. *Plymouth Sound*, the estuary of the rivers Tamer and Plym, between Devonshire and Cornwall. This estuary is double: the Plym-mouth, forming the Catwater, a convenient harbour for merchant ships; and the Tamer, expanding into the road or harbour of Hamoaze, which is almost completely land-locked, with secure anchorage ground, and depth of water sufficient to float the largest ships close to the quays. The sound is now protected from the heavy swell produced by the south-west gales, by a stupendous breakwater near its mouth. *Polkerris Bay*, an indent of

the land, half way between Plymouth Sound and Falmouth Harbour. *Falmouth Harbour*, and *Mount's Bay*, deriving its name from Saint Michael's Mount, an insulated rock off the coast of Cornwall.

On the West coast: — *St. Ives Bay*, in Cornwall. *Barnstaple* or *Bideford Bay*, in Devonshire. *Bristol Channel*, a deep gulf, between Wales on the north, and the counties of Devon and Somerset on the south, about 25 miles wide at its mouth, and contracted to 8, where it joins the estuary of the Severn. *Bridgewater Bay*, on the Somerset coast of the Bristol Channel. *Swansea Bay* and *Caermarthen Bay*, two wide inlets, on the north side of the Bristol Channel, in Glamorganshire and Caermarthenshire. *Milford Haven* and *St. Bride's Bay*, Pembrokeshire. Milford Haven is one of the safest and most capacious harbours in Britain; the water is deep, and completely land-locked; and it may be safely entered at any time without a pilot. A royal dockyard has been built on the south side of the haven near Pembroke. *Cardigan Bay* and *Caernarvon Bay*, on the west coast of the respective counties. The *Menai Strait*, between Caernarvonshire and the island of Anglesea, affords a navigable channel for vessels of moderate burden, and is about 14 miles in length, varying in width from about two miles to 200 yards. It is crossed by a magnificent suspension bridge, the largest in the kingdom. The railway which proceeds from Chester to Holyhead is carried across the Strait through the prodigious iron tube invented by Stephenson, the strength of which is such that no deflection is occasioned by the train as it passes through. *Holyhead Bay*, between the island of Holyhead and the opposite coast of Anglesea. *Lancaster Bay* and *Morecambe Bay*, in the north-western part of Lancashire. The *Solway Firth*, a large shallow estuary, between Cumberland and Dumfries-shire in Scotland. A great part of this firth, and of the two last mentioned bays, is left bare by the tide at low water.

CAPES.—**Flamborough Head* and **Spurn Head*, in Yorkshire; *Gibraltar Point*, in Lincolnshire; *Hunstanton Cliff*, at the eastern entrance of the Wash; **Cromer Head-land* and **Winterton-Ness*, on the coast of Norfolk; *Orford-Ness*, in Suffolk; the *Naze*, in Essex; **North Foreland*, **South Foreland*, and **Dungeness*, in Kent; **Beachy Head* and *Selsea-Bill*, in Sussex; **Hurst Point*, in Hampshire; *Dunnose Head*, on the east side of the Isle of Wight; the **Needles*, in the west of the Isle of Wight; *St. Alban's Head* and **Portland-Bill*, in Dorsetshire; *Hope's-Nose*, *Berry Head*, *Start Point*, *Prawle Point*, *Bait Head*, and *Stoke Point*, in Devonshire; *Rame Head*, at the west side of the entrance at Plymouth Sound; *Deadman Point*, **Lizard Point*, *Land's End*, *Cape Cornwall*, *Trevose Head*, and *Pentire*, in Cornwall; *Hartland Point*, *Baggy Point*, *Mort Point*, on the north coast of Devonshire; *Penarth Head*, **Mumbles Head*, and *Worms Head*, in Glamorganshire; *St. Govan's Head*, *St. Ann's Head*, *St. David's Head*, and *Strumble Head*, in Pembrokeshire; *Brach-y-Pwll*, the south-western point of Caernarvonshire; **Linis Point* or *Llane-Lian*, the north-eastern extremity of Anglesea; *Great Orme's Head*, in Denbighshire; **Point of Air*, in Flintshire; **St. Bee's Head*, in Cumberland; **Point of Aire*, in the Isle of Man.

ISLANDS, SANDBANKS, and SHOALS. — *On the East coast:* — *Holy Island*, or *Lindisfarne*, off the coast of N. Durham, separated from the mainland by a strait 3 miles wide, left bare at low water, but passable with safety only at one place, contains the remains of an ancient abbey, and a castle built upon a lofty rock. *Fern Islands* and *Staple Islands*, two groups of rocks, on which lighthouses are erected, lying off Bamborough Castle, in Northumberland. *Coquet Island*, off the mouth of the Coquet River, Northumberland. Sandbank, on which the *Spurn* floating-light vessel is moored, 3½ miles south-east of Spurn Head, at the mouth of the Humber. *Dudgeon Shoal*, on the south-western side of which a floating-light vessel is moored, nearly 26 miles north of the port of Wells in Norfolk. Anchorage of the *Lynn Well* floating-light vessel at the mouth of the Wash, between the channels called Boston Deeps and Lynn Deeps. *Newarp Sandbank*, at the northern extremity of which a floating-light vessel is moored about 11 miles north of Winterton, on the Norfolk coast. Anchorage of the *Stanford Channel* floating-light vessel off Leostoffe or Lowestoff, in Suffolk. *Galloper Sandbank*, about 20 miles south of Orford-ness, on the Suffolk coast. The islands of *Mersea*, *Osey*, *Northey*, *Foulness*, *Wallasea*, *Potten*, and *Canvey*, lying off the coast of Essex. *Sunk Sandbank*, at the eastern extremity of which a floating-light vessel is moored, between King's Channel and Sunk Channel at the mouth of the Thames, 15 miles SW. by W. of Harwich. Anchorage of the *Nore* floating-light vessel, between the Thames and Medway navigations, about 3 miles NE. of Sheerness. *Sheppey Isle*, off the north coast of Kent. The *Isle of Thanet*,

* The prefixed *asterisk* denotes the headland to be the site of a lighthouse.

the north-eastern portion of Kent, formed by the two branches of the river Stour, which were anciently a strait or arm of the sea. *Goodwin Sands*, near the north sand head of which the Goodwin floating-light vessel is moored, about 7 miles SSE. of the North Foreland. Anchorage of the *Gull Stream* floating-light vessel, inside the Goodwin Sands, and opposite to Sandwich.

On the South coast: — *Owers Shoal*, near the north-eastern extremity of which a floating-light vessel is moored, 6 miles SE. by E. of Selsea Bill, on the Sussex coast. *West Thorney Island*, off the south-west coast of Sussex. *Heyling Island*, off the south-east coast of Hampshire. The *Isle of Wight*, a large and beautiful island, called the garden of England, off the coast of Hampshire. *Purbeck* and *Portland* islands, two peninsulas off the coast of Dorset, noted for their quarries. *Portland* is a vast mass of freestone, joined to the mainland by a shingly beach nine or ten miles long, called the *Chesil Bank*. The *Nab Rock*, 2½ miles SE. by E. of Great St. Helen's, in the Isle of Wight; and near which the Bembridge floating-light vessel is moored. *Eddystone Rock*, on which a celebrated lighthouse is erected, about 9 miles SSW. of the Rame Head in Cornwall. *Longships Rocks*, on the highest of which a lighthouse is erected, 3 miles west of the Land's End, in Cornwall. The *Scilly Islands*, a group, seventeen in number, situate about 30 miles WSW. of the Land's End; the largest are St. Mary's, Fresco or Frescow, St. Martin's, Ganilly, Bryer, and St. Agnes, which last is one of the most southern in the group, and is the site of a lighthouse.

On the West coast:—*Lundy Island* (site of a lighthouse), situate at the entrance of the Bristol Channel, about 9 miles NW. by N. of Hartland Point, in Devonshire. *Barry Island*, lying immediately off the southern coast of Glamorganshire. *Flatholm* (site of a lighthouse), and *Steepholm*, situate near the middle of the channel, opposite to Bridgewater Bay. *Caldy*, *Stockham*, *Skomer*, *Grasholm*, *Smalls* (lighthouse), *Ramsey*, *Bishop and his Clerks*, all on the coast of Pembroke. *Cardigan Island*, at the mouth of the River Teify, Cardiganshire. *St. Tudwal Islands*, off the south-eastern point of Caernarvonshire. *Bradsea* or *Bardsey Island* (site of a lighthouse), situate about 3 miles to the south of Braeh-y-Pwll headland, in Caernarvonshire. *Anglesea*, itself a county. *Holyhead*, a portion of Anglesea, situate to the west of the principal island, from which it is separated only by a very narrow channel. *South Stack*, the site of a lighthouse, a small island to the west of the promontory of Holyhead, with which it is connected by a suspension bridge. *Skerries Island* (site of a lighthouse), situate about 1½ miles off the north-west point of Anglesea. *Helbre Island*, at the entrance to the estuary of the River Dee. Anchorage of the Liverpool floating-light vessel, about 6 miles NW. of Helbre Island. *Black Rock* (site of a lighthouse), on the Cheshire side of the entrance to the River Mersey. *Walney Island*, situate at the northern entrance to Lancaster and Morecambe bays; a lighthouse is erected on its southern extremity. The large and populous *Isle of Man*. The *Calf of Man* (site of a lighthouse), a small island, separated by a narrow channel from the southern extremity of the Isle of Man.

On the South coast of the English Channel: — The *Norman* or *Channel Islands*, which have been an appendage of the English crown since the eleventh century. The principal of them are *Jersey*, 12 miles by 5 or 6; *Guernsey*, 9 miles by 6; *Alderney*, *Sark*, *Herm*, *Caskets*, and many other islets and rocks of small extent. Between Alderney and Cape La Hague in France the tide rushes through with great impetuosity; from which circumstance the passage has got the name of the *Race of Alderney*.

RIVERS. — The THAMES is formed by the union of the *Leeh*, *Colne*, *Charne*, and *Isis*, small streams which rise in different parts of the Cotswold hills, in Gloucestershire. Under the name of Isis, the river thus formed flows eastward till it is joined by the Thame near Dorchester, in Oxfordshire; after which it becomes properly the Thame-isis, or Thames. From this it flows eastward to the German Ocean. (See INLAND NAVIGATION.) Its principal affluents are: the *Windrush*, *Evenlode*, *Cherwell*, and *Thame*, in Oxfordshire; the *Kennet* and *Loddon*, in Berkshire; the *Colne*, between Buckinghamshire and Middlesex; the *Brent*, in Middlesex; the *Lea*, from Hertfordshire; the *Wey* and the *Mole*, from Surrey; the *Roding*, from Essex; the *Darent* and the *Medway*, from Kent. The *Medway* is a large river, with a broad estuary, navigable by the largest ships of war up to Chatham.

The SEVERN issues from a small lake on the east side of Plinlimmon, in Montgomeryshire, and flows in a circuitous direction through the counties of Salop, Worcester, and Gloucester, and enters the Bristol Channel. The Severn is larger than the Thames. During the first part of its course, it preserves the characteristics of a

mountain stream, being clear, and at times bordered by picturesque scenery; but on leaving Wales, and entering the more level country, it becomes a full, slow-flowing river, and admits of easy navigation. Its principal affluents are: the *Teme*, in Montgomeryshire; the *Upper Avon*, in Warwickshire, a large river, navigable for barges for about 40 miles; the *Lower Avon*, between Gloucestershire and Somersetshire, navigable for large ships from its mouth, at King Road up to Bristol, a distance of 8 miles. The tide at the mouth of the Lower Avon rises 48 feet. The *Wye*, celebrated for its romantic and beautiful scenery, rises on the south side of Plinlimmon, near the source of the Severn, flows with a winding course through the counties of Radnor, and Hereford, and, after separating Gloucestershire from Monmouthshire, unites with the larger stream below Chepstow, where the tide rises 60 feet. The Wye is navigable for barges for about 100 miles.

The TRENT rises in the moorlands of Staffordshire, about four miles north of Burslem, and flows through the counties of Stafford, Derby, Nottingham, and Lincoln, into the Humber. It is navigable for barges to Burton, in Derbyshire, a distance of 117 miles, during which it falls only 118 feet. Its principal affluents are: the *Soar* and the *Wreke*, from Leicestershire; the *Tame*, from Warwickshire; the *Blyth* and the *Sow*, in Staffordshire; the *Dove*, between Staffordshire and Derbyshire; the *Derwent*, in Derbyshire; the *Devon* and the *Idle*, in Nottinghamshire.

The other rivers which unite with the Trent in forming the Humber are: the *Ouse*, *Swale*, *Ure*, *Nidd*, *Wharfe*, *Derwent*, *Aire*, *Calder*, *Don*, *Rother*, and *Hull*, all in Yorkshire. The first ten form one stream, which retains the name of Ouse till it reach the mouth of the Trent, and most of them have been rendered navigable for barges through great part of their course. The Hull is a small river in the east Riding, having at its mouth the great commercial port of Kingston-upon-Hull.

The *Till*, *Aln*, *Coquet*, *Wensbeck*, *Blyth*, *Tyne*, *Derwent*, in Northumberland; the *Wear*, in Durham; the *Tees*, between Durham and Yorkshire; the *Esk*, in Yorkshire; the *Witham* and the *Glen*, in Lincolnshire; the *Nen*, in Northamptonshire, joined by the *Welland* from Leicestershire and Rutlandshire; the *Great Ouse* from Buckinghamshire, flows through the counties of Bedford, Huntingdon, Cambridge, and Norfolk, into the Wash, and is joined by the *Tove*, in Northamptonshire, the *Cam* or *Granta*, in Cambridgeshire, the *Lark* and the *Kennet* from Suffolk, the *Little Ouse*, the *Wissey* and the *Nar* from Norfolk; the *Bure*, *Yare*, and *Wensom*, in Norfolk; the *Waveney*, between Suffolk and Norfolk; the *Deben*, *Orwell*, and *Stour*, in Suffolk; the *Colne*, *Blackwater*, and *Chelmer*, in Essex; the *Stour*, in Kent; the *Rother*, *Cuchmere*, *Ouse*, *Adur*, and *Arun*, in Sussex; the *Anton*, or *Test*, and the *Itchin*, in Hampshire, enter Southampton water; the *Avon* from Wiltshire, and the *Stour* from Dorsetshire, enter the sea in a united stream, between the Needles and Poole harbour; the *Frome* falls into Poole harbour; the *Otter*, *Exe*, *Teign*, *Dart*, *Plym*, *Torridge*, *Waldon*, and *Taw*, in Devonshire; the *Tamer*, between Devonshire and Cornwall; the *Stoke*, *Parret*, *Brue*, and *Yeo*, in Somersetshire; the *Usk*, in Brecknockshire and Monmouthshire; the *Taff*, in Glamorganshire; the *Towey* and the *Taff*, in Cacrmarthenshire; the *Teifi* and *Rheidiol*, in Cardiganshire: the *Dovey*, or *Dyfi*, from Montgomery, flows into Cardigan bay; the *Conway*, in Caernarvonshire; the *Clywyd*, in Denbighshire; the *Dee* flows through Merioneth, Flint, and Cheshire; the *Mersey* forms a wide estuary, between Lancashire and Cheshire, and is joined by the *Weaver* and *Bollin* from Cheshire, the *Irwell*, and the *Roch*, from Lancashire; the *Ribble* rises in the west moorlands of Yorkshire, and with its affluents, the *Darmen* and the *Douglas*, forms a wide but shallow estuary on the coast of Lancashire; the *Wyre* and the *Lune*, in Lancashire; the *Dudden*, in Westmoreland; the *Cocker* and the *Eden*, joined by the *Caldew* and the *Petteril*, in Cumberland.

LAKES.—These are few and inconsiderable in size, as the largest of them (Winandermere) only occupies an area of about three square miles. The principal are in Cumberland, Westmoreland, and Lancashire, viz.—*Ulles-Water* (the second largest of the English lakes), on the north-eastern side of Helvellyn, partly in Cumberland, and partly in Westmoreland; *Hawes-Water*, in Westmoreland, about five miles to the east of Helvellyn; *Thirlemere*, or *Leathes-Water*, on the western side of Helvellyn; *Winandermere* on the borders of Westmorcland and Lancashire; *Coniston-Water*, in Lancashire, to the west of Winandermere; *Rydal* and *Grassmere* Waters, near the northern extremity of Winandermere; *Derwent-Water*, called also *Keswick Lake*, from its vicinity to the town of that name in Cumberland; *Bassenthwaite-Water*, to the north-west of Keswick; and *Crummock-Water*, *Buttermere*, *Lowes-Water*, *Ennerdale-Water*, and *Wast-Water*, in the south-west of Cumberland. These lakes are all celebrated for the beauty and romantic character of their scenery. Two small lakes named *Whittleseamere* and *Ramseymere*, are situate in the north of Huntingdonshire. *Bala Lake*, in Merionethshire, is the largest of the Welsh lakes. Its dimensions are four miles in length by one in breadth.

MOUNTAINS, VALLEYS, AND PLAINS. — These have been already described in the view of the British Mountain Systems (*antè*, p. 159), and under the head of "General Aspect of England" (*antè*, p. 177.)

CLIMATE.—The climate of England is that of an insular country of limited extent, subject, in consequence, to rain, and exempt from intense heat or cold. It is less humid than the climate of Ireland, but less dry than that of the opposite shores of Holland and Germany. The climate of the southern counties differs but little from that of Brittany, Normandy, and Flanders; while that of the north is very similar to the climate of Denmark. If England have less summer warmth than continental countries on the same parallel, it generally escapes the intense frosts which they experience. On the other hand, the weather in England is much more variable than in the inland parts of the Continent, and the sky is generally less clear. The moderate

heat and frequent rain preserve throughout the year that verdant pasture which, in autumn, the Continent enjoys only in its maritime borders; whilst those droughts in spring, which are so injurious in the south of France, and in similar latitudes on the Continent, are scarcely known in England. In point of salubrity also, England will bear a comparison with any of the neighbouring countries; for variable as her climate is, in no country do the inhabitants enjoy in general a greater share of health, or furnish so many examples of longevity. This beneficial effect England owes to her insular situation, the extremes of heat and cold being prevented by the modifying influence of the surrounding seas. There exists, however, a considerable difference in the climate of different parts of England. The western portion, which is contiguous to the Atlantic, and contains hills and mountains which intercept the clouds, is much more exposed to rain than the eastern, where the surface of the country is level, and the expanse of sea much less considerable. Another, and equally remarkable difference arises from latitude; the harvest being a fortnight or three weeks later in the north than in the south of England. In March the weather is proverbially raw and cold; in April it is generally wet, and favourable to vegetation; but May, though a pleasant month, can hardly be said to bring with it more "indulgent skies." In June, July, and August, the weather is more uniform; but the heat is seldom so great as to prevent daily exercise. November, though often wet and foggy, is only a prelude to winter; and even December does not often bring intense frost, which is commonly reserved for January. This month, with February and part of March and December, are, properly speaking, the only winter months. During the six months from October to March, the mean temperature of the central part of England is usually between 42° and 43° of Fahrenheit. In December, January, and February, it is generally below 40°; in July and August it varies from 62° to 65°. The variations of temperature are greatest and most frequent in the equinoxial months, March and September, when there is often a difference of 18° or 20° between the day and the night; while in the summer months this difference is seldom more than from 12° to 15°, and in December and January only from 6° to 8°. The mean annual temperature, noon and night, of the central part of England is about 50°. The greatest summer heat seldom exceeds 80°, and the cold of December or January is rarely below 20° or 25°. At Liverpool, the mean temperature at noon, during twenty-five years, was 53°, the extremes being 86° and 22°. At the same place, the greatest range of the thermometer is 64°, and the mean annual range 46°. At Lancaster, the mean temperature, noon and night, is 48°, and the extremes 82° and 18°. At Dover, the mean temperature is 57°, and the mean annual range 51°. At London, the mean annual temperature is 52°, and the extremes 81° and 20°, the former occurring generally in July, the latter in January. In mild situations, in Devonshire and Cornwall, the winter temperature is 2°, 3°, 4°, and even 5° higher than in London. Penzance, in the latter county, is particularly celebrated for the mildness and salubrity of its climate; and is, in consequence, much recommended to persons afflicted with pulmonary diseases. The largest proportion of rain falls in the north-west of England: the smallest in the neighbourhood of London. At Keswick the average quantity is 67 inches annually; at London the average is 22.7 inches; and the average of the whole kingdom may be from 30 to 40 inches. It was stated at the last meeting of the British Association, that at London the SW. wind prevails 112 days, the W. 53, the NNE. 50, the S. 18, the NE. 58, the SE. 22, the E. 27, and the N. 16. Taking England throughout, the prevalent winds are the west and south-west, in the proportions of 5 to 8.

GEOLOGY AND MINERAL PRODUCTIONS.—Our notices under the first of these heads must necessarily be limited to a brief view of the classification of the British rocks, and their geographical distribution throughout England.

It has been already pointed out (see *ante*, pp. 62, 71 and 72) that rocks are of two classes, viz. the *stratified* or deposited rocks, and the *unstratified* or chrystalline, and that the former were at various eras produced under water, and subsequently elevated to their present positions by the upheaving force, or by the protrusion of the latter. The stratified rocks admit of being variously classified; but, following the arrangement proposed by Professor Phillips, we may conceive, the whole mass of known stratified rocks to be divided into three great portions, called PRIMARY, SECONDARY, and TERTIARY, from the respective eras of their production; the lowest being the oldest or earliest, the uppermost being the newest or latest. These great portions may be again subdivided into systems or assemblages, composed of formations or groups in many respects analogous in character and origin, and named from the most characteristic rock in each:—*Cretaceous* from chalk, *Oolitic* from oolite, *Saliferous* from saline deposits, &c. or else from locality, as, *Silurian*.* The general arrangement of these groups of strata, proceeding from the surface downwards, will be found in the following table.

* See article "GEOLOGY," by Professor John Phillips, in Encyclopædia Britannica, *Seventh Edition*. Also the same printed separately.

TABLE OF BRITISH STRATIFIED ROCKS.

Names of Formations or Groups of Strata.	*Thickness in yards.*	*Subdivisions adopted.*	*Nature of the Deposits.*
		TERTIARY STRATA.	
Crag,	16	Upper or red crag,	Shells, pebbles, sand, &c.
		Lower or coralline crag,	Shells and corals in sand or limestone.
Fresh-water group,	33	Upper fresh-water beds,	Fresh-water shells in marl or limestone.
		Estuary marls,	Estuary shells in marl.
		Lower fresh-water beds,	Fresh-water shells in marl or limestone.
London clay,	200 to 600	London clay,	Shelly clay with septaria.
		Plastic clay and sands,	Coloured sands and clays, with or without shells.
		SECONDARY STRATA.	
		Cretaceous System.	
Chalk,	200	Upper chalk,	Soft, with flints.
		Lower chalk,	Harder, with or without flints.
		Chalk marl,	Soft argillaceous beds.
Green-sand,	160	Upper green sand,	Fossiliferous often chalky.
		Gault,	Blue marl or clay, fossiliferous.
		Lower green sand,	Often ferruginous, fossiliferous.
		Oolitic System.	
Wealden,	300	Weald clay,	Clay, with fresh-water shells.
		Hastings sands,	Sandstone, with plants, &c.
		Purbeck beds,	Clay and limestone, with fresh-water shells.
Upper or Portland Oolite,	100 to 200	Portland oolite,	Limestone, often cherty and fossiliferous.
		Sand,	Sand.
		Kimmeridge clay,	Blue clay, with shells.
Middle or Oxford Oolite,	150	Upper calcareous grit,	Sandstone, often shelly.
		Coralline oolite,	Shelly oolite and coral beds.
		Lower calcareous grit,	Shelly sandstone.
		Oxford clay,	Clay, with shells and septaria.
		Kelloways rock,	Sandstone, with shells.
Lower or Bath Oolite,*	150	Clay,	Generally with few shells.
		Cornbrash,	Coarse shelly limestone.
		Sand,	With concretionary sandstone.
		Forest marble,	Shelly limestone.
		Clay,	Thin blue clay.
		Bath oolite,	Shelly compact and sandy oolite.
		Fuller's earth,	Calcareous and argillaceous beds.
		Inferior oolite,	Shelly and oolitic.
		Sand,	Shelly calcareous sand.
Lias,	350	Upper lias shale,	Blue clay or aluminous shale, shelly.
		Marl-stone,	Sandy limestone, &c. shelly.
		Middle lias shale,	Blue clay or shale, shelly.
		Lias limestones,	Blue and white compact limestone shelly.
		Lower lias shale,	Coloured clays and marls.
		Saliferous or *Red Sandstone System.*	
New Red Sandstone, (North of England.)	300	Variegated marls,	Contain gypsum and rock-salt; shells rarely found.
		Variegated sandstones,	Red, white, &c. sandstones, no shells.
		Conglomerate,	Pebbly sandstone.
Magnesian Limestone, (Yorkshire, &c.)	100	Knottingley limestone,	Thin-bedded close-grained limestone, with few shells.
		Gypseous marl,	Red and white clays.
		Magnesian limestone,	Yellow, with local deposits of shells.
		Marl-slate,	Laminated calcareous rocks.
		Rothetodteliegende,	Red sandstone, with plants.
		Carboniferous System.	
Coal,	1000	Upper, Middle, Lower,	All consisting of sandstone, shales, &c. with beds of hed of coal, layers of ironstone, and deposits of plants.
Millstone-grit,	300	Upper, Middle, Lower,	Coarse and fine sandstones, shales, coal, ironstone, &c. with plants and shells.
Carboniferous Limestone, (North of England.)	600	Yordale rocks,	Limestones, grits, and shales, with coal, &c. and shells.
		Scar limestone,	Very thick limestone, shelly.
		Alternating red sandstones and limestones, with coal, &c.	
Old Red Sandstone, (Herefordshire.)	100 to 3,300	Conglomerates and sandstones,	A locally variable series of rocks, fossiliferous in the south of England.
		Coloured marls and cornstones,	
		Flagstone beds,	

* As seen near Bath. In other parts of England it offers important differences.

Names of Formations or Groups of Strata.	*Thickness in yards.*	*Subdivisions adopted.*	*Nature of the Deposits.*
		PRIMARY STRATA.	
		Silurian System, as it occurs on the border of Wales.	
Ludlow Rocks,	660	Sandstones, Limestones, Shale.	Argillaceous sandstone, shelly. Shelly and coralloidal.
Wenlock Rocks,	600	Limestone, Shale.	Abounding in zoophytes, trilobites, &c.
Caradoc Rocks,	830	Shelly limestone. Shelly sandstone, &c.	
Llandeilo Rocks,	400	Calcareous laminated beds,	With trilobites, &c.
		Grauwacké System, as it occurs in Wales.	
Plynlymmon Rocks,	unknown		Hard, slaty, fine or course grained rock, with few or no organic remains.
Bala Limestone,	unknown		Dark laminated, slaty limestone, with fossils.
Snowdon Rocks,	unknown		Hard slaty rocks, with (locally) few organic remains.
		Clay-slate System, as it occurs in Cumberland and Westmoreland.	
Clay-slate,	unknown		Softer slaty rocks. No organic fossils.
Chiastolite-slate,	unknown		The same, with chiastolite. No fossils.
Hornblende-slate,	unknown		The same, with hornblende. No fossils.
		Mica-Schist System.	
Chlorite-schist, with Limestone,	unknown		Quartz-rock, &c. No organic remains.
Mica-schist, with Limestone,	unknown		Quartz-rock, &c. No organic remains.
		Gneiss System.	
Gneiss, with Limestone,	unknown		Quartz-rock, mica-schist, &c. No organic remains.

In England, *primary stratified rocks* are found only in Devonshire, Cornwall, Wales and some of the English counties on its borders, and in Westmoreland and Cumberland, and they impart to almost all of these districts a rugged and lofty aspect, which strikingly contrasts with the flatness and want of elevation so remarkable in other parts of the kingdom, where the secondary and tertiary rocks prevail. These primary rocks are chiefly limited to the *Clay-slate*, the *Grauwacké*, and the *Silurian Systems*, the two first of which extend over all the south of Cornwall and Devon, the northern portion of the latter county, a large portion of Wales north of St. David's Head, and west of the Silurian region on the Welsh border, and nearly the whole of the lake district of Lancashire, Westmoreland, and Cumberland. *Gneiss and Mica slate*, the most ancient of the stratified rocks, are almost unknown in England. Some traces of the systems to which they belong are seen in the Saddleback rocks in Cumberland, and more distinctly in the Isle of Man. The *secondary order* of rocks commences with those included in the *Carboniferous System*, which is most extensively developed in England, especially in the northern counties, and in South Wales, and parts of England adjacent to it. The northern portion occupies an area, the boundaries of which will be described by a line drawn from the neighbourhood of Newcastle-under-Lyne to Nottingham, from thence northward, with more or less of curvature to the mouth of Tyne, thence along the sea-coast and Scottish border, to the neighbourhood of Longtown in Cumberland, and from thence to Ravenstone-Dale, in Westmoreland, Liverpool, Ashton-under-Lyne, and Newcastle-under-Lyne. The great southern portion extends in a crescent-like shape, from St. Bride's Bay to Newport in Shropshire, and includes a large extent of South Wales, nearly the whole of Monmouthshire and Herefordshire, and part of Shropshire. Outlying groups belonging to this system also occur in several places, which will be noticed when we come to point out the situation of the different coal-fields. Referring to the preceding table for an enumeration of the formations included in the carboniferous system, it may be remarked, that the millstone-grit rocks which prevail to a great extent in the north of England, are little known in the southern carboniferous region, while, on the other hand, the old red sandstone formation, which is so enormously developed in the latter, is in the former limited to a few inconsiderable traces occuring principally in the neighbourhood of the Tweed. The *Saliferous*, or *New Red Sandstone System*, commences on the north-east, at the river Tyne, and skirts the northern carboniferous region, as far as the neighbourhood of Liverpool; it is bounded on the west by the silurian and carboniferous regions of the west of England, and on the east by the oolitic rocks, next to be described. It occurs also in the plain of Carlisle, on both sides of the upper portion of the estuary of the Severn, and in the valley of the Exe in Devonshire. Spread over so immense a space, and never rising to elevations much above 800 feet, the red sandstone system (Mr. Phillips remarks) folding its level surface round the broken coal strata, seems to be like the large uplifted bed of a shallow sea, full of rocky islands, and bounded by bold promontories. The magnesian limestone which constitutes one of its members occurs in several places on the borders of the coal strata, and principally in one almost unbroken line, extending from the mouth of the Tyne to Nottingham. The *Oolitic System*, named from the roe-like particles of some of its beds, occupies a zone nearly thirty miles in average breadth, extending from Yorkshire on the north-east, to Dorsetshire on the south-west, and including within its limits some of the best building materials in the kingdom. An included freshwater formation, named the Wealden, from its locality, extends over a large portion of Kent and Sussex. The *Cretaceous System*, or chalk deposit, is one of the most remarkable in England. It stretches with no material interruption (except in the neighbourhood of the Wash), from Flamborough Head in Yorkshire, to Sidmouth in Devonshire. From Salisbury Plain, one of its great central masses, it proceeds eastwards between the London and Isle of Wight basins, forms the North Downs in Surrey, and terminates at the Straits of Dover. It also appears on the northern coast of Norfolk, in the Isle of Thanet, and in the south of the Isle of Wight. The deposits which form the *tertiary strata*, consist chiefly of the argillaceous formations abounding in organic remains, named the plastic clay, and the London clay; these extend over Middlesex, the northern portion of Surrey and Kent

(with the exception of the Isle of Thanet, which is chalk), the whole of Essex and Sussex, and the greater part of Norfolk. A variety of the same formation also occurs in the district comprehended between Southampton on the north, Dorchester on the west, Newport in the Isle of Wight on the south, and Brighton on the east. The localities of the *post-tertiary* or *diluvial* and *alluvial depositions*, are too numerous to admit of being mentioned in a work like the present.

The *unstratified* or *ancient volcanic rocks*, do not cover the surface of England to any great extent, but they are widely distributed. *Granite* is found in considerable masses in Devonshire, Cornwall, and the lake district of Cumberland. It occurs to a small extent in Anglesea, the Isle of Man, the Scilly Islands, and Lundy Isle, the last but one of which are entirely granitic. *Sienitic Granite* appears in the Malvern Hills, and in the neighbourhood of the town of Mount Sorrel in Leicestershire. *Trap* has been protruded through all the different stratified formations in the north, west, and south-west of England; most extensively in the northern carhoniferous countios, Cornwall, Devonshire, and Silurian region, and to a less extent in the south-western counties of South Wales, the south-western portion of Caernarvonshire, in the Cumberland lake district, and in Anglesea. An elongated mass of it is found in the centre of Derbyshire, and it occurs in several parts of the new red sandstone formation in the centre of England, particularly in the south of Staffordshire, and north of Worcestershire. The following is a list of the names and elevations of some of the principal granitic and trapean eminences throughout England; their localities will in most instances be found by a reference to our Table of the British Mountains (see *anté*, pp. 163, 164.)

Granitic and Scienitic.—Brown Willy (Cornwall 1,368 feet; Butterton Hill (Devonshire) 1,203 ft.; Carn Bonellis (Cornwall) 822 ft.; Cawsand Beacon (Devonshire) 1,792 ft.; Hensbarrow Beacon (Cornwall) 1,034 ft.; Kitt Hall (Cornwall) 1,067 ft.; Rippon Tor (Devonshire) 1,549 ft.; Sennen (Cornwall) 837 ft.; St. Stephen's Down (Cornwall) 605 ft.

Trapean.—Brown Clee Hill (Shropshire) 1,805 ft.; Cheviot (Northumberland 2,658 ft.; Hedgehopo (Northumherland) 2,347 ft.; Plumstone Down (Pembrokeshirc) 573 ft.; Base of Rodney's Pillar (Montgomeryshire), 1,199 ft.: Wreckin (Shropshlre) 1,320 ft.

Leaving the extent of the importance of the mineral productions of England, as sources of national wealth, to be considered when we come to notice the Productive Industry of England, we shall at present briefly advert to their geographical distribution. In so doing, it may at the outset be remarked generally, that if the localities in which iron is found are not taken into account, the whole of the metalliferous and coal districts are situate to the west and north of a line commencing at Exmouth, in Devonshire, continued northwards through Tamworth to Tewkesbury, and from thence, with a moderate curvature, to the east through Stratford-on-Avon, Leicester, Nottingham, Newark, Gainsborough, and York, to the mouth of the Tees. The line thus described is remarkable in another respect, as it forms a sort of natural boundary between the agricultural and the manufacturing populations.

Coal, without the command of which the immense provision of metallic ores which England possesses would be comparatively valueless, is an important member of the carboniferous system of rocks, the development of which in England we have described in the preceding page. The beds in which it is deposited, or the *coal-fields*, admit of being arranged into three principal groups, occupying districts which may be named the Northern, Central, and Western. The *northern district* is situate to the north of the Trent and Mersey, and is traversed from north to south by the range of hills which form the central chain of England. It includes to the east of this chain the celebrated *Northumberland and Durham coal-field*, occupying the eastern sides of these counties, from tho Coquet to the Tees; and the scarcely less important *South-Yorkshire, Nottingham and Derby coal-field*, which extends from the neighbourhood of Leeds to Derby. To the west of the central chain, the northern district embraces the *Whitehaven coal-field*, which is a small but valuable bed, extending northwards from Whitehaven to Maryport, and thence eastwards to the River Calder; another small field, but of little consequence, lying at the foot of *Ingleborough*; the great coal-field of *Manchester* or *South Lancashire*, extending from the south-west of Lancashire to the neighbourhood of Oldham; and the important bed at *Cheadle* and *Newcastle-under-Lyne*, usually called the *Pottery coal-field*. The central district contains three important though not very extensive deposits of coal, viz. the *Ashby-de-la-Zouch coal-field*, on the borders of Leicestershire and Staffordshire; the *Warwickshire coal-field* extending from the neighbourhood of Tamworth and Atherstone, on the north-west, to Coventry on the south-east; and the *Wolverhampton, Bilston, and Dudley coal-field* in the south of Staffordshire, from which locality in the county the field is sometimes denominated. The coal-fields in the western district admit of a treble subdivision, which may thus be stated:—1. *North-Western*—the *Anglesea coal-field*, about seven miles distant from the eastern extremity of that county, and intersecting the island in a direction parallel to the Menai Strait; and the *Flintshire coal-field*, which extends from the Point of Air, to the neighbourhood of Oswestry in Shropshire; 2. *Mid-Western*—the coal-fields in Shropshire, and on the borders of Gloucestershire, viz.—*Shrewsbury Plain; Colebrook Dale*, extending from Wombridge to Coleport on the Severn; *Brown Clee Hill* and *Titterstone Clee Hill*, to the south of Colebrook-Dale; *Billingsley* to the east of the Clee Hills, and stretching from Deuxhill to the borders of Worcestershire; and two small fields in the neighbourhood of *Pensax* and the *Abberley Hills* in Worcestershire; 3. *South-Western*—the great *coal-basin of South Wales*, extending from Pont-y-pool in Monmouthshire on the east to St. Bride's Bay on the west; the *Forest of Dean coal-field*, a small but valuable bed in the west of Gloucestershire; and several small fields in the south-west of Gloucestershire, and north of Somersetshire, principally in a tract stretching from Iron-Acton in the former county, to the foot of the Mendip Hills. It would he difficult to state with accuracy the size of the whole area of the coal-fields in England and Wales, but its immense extent may be inferred from the fact, that the superficial extent of the coal-basin of South Wales alone, is estimated at 1,200 square miles. The Northumberland and Durham coal-field covers an area of 723 square miles, of which only about a seventh has as yet been excavated. The Yorkshire and Derby field measures 60 miles in length, by 26 miles in breadth, at its widest part; the Lancashire or Manchester field is 35 miles in length, and has probably an average breadth of 6 miles; the coal-field of Dudley is about 60 square miles in extent, and those of Whitehaven and Flintshire are not much inferior in size. The other fields which we have enumerated, are of various sizes, ranging from between 5 and 20 miles in length, and 2 to 8 or 10 miles in breadth. The total thickness of the coal-formation varies from 1,000 to 1,500 yards; but the total thickness of the included coal is generally only about 50 or 60 feet. In most districts the coal is divided into 20 or more heds, of a thickness from 6 feet to a few inches, alternating with beds of sandstone and shale, from 20 to 100 times the same thickness; but at Ashby-Wolds, in the Ashby-de-la-Zouch field, the main coal is 17 to 21 feet thick; and in the Dudley and Bilston coal-field, the beds rest one upon another, so as to form apparently but one

seam, of the extraordinary thickness of from 30 to 45 feet in different places. In the Northumberland and Durham coal-field, the two seams known by the names High Main and Low Main, which are the thickest and most valuable in the district, are each 6 feet thick. In proportion to the enormous thickness of the coal formation, it has been penetrated in working only to a comparatively small depth. The coal-mine at Radstock, near Bath, which is said to be 409 yards in depth, has for long been considered the deepest mine in England; but there is a coal-pit, at Monk-Wearmouth, near Sunderland, the depth of which is 540 yards, and the latter is thus farther remarkable, that owing to the very inconsiderable elevation of the district in which it is situate, it is the deepest sinking *below the level of the sea* in the world. At Whitehaven, the coal is wrought at a depth of 298 yards from the surface, the workings being in some parts to a considerable extent beneath the bed of the Irish sea.

Iron, the most useful of all the metals, is found in England and Wales in quantities almost inexhaustible. Clay-ironstone, the most common variety of its ores, is an extensively diffused member of the coal formation; another ore, called the red hematite, occurs in Lancashire, in the new red sandstone formation; and there are found in great abundance throughout the upper portion of the oolites, the Wealden formation, and the London clay, imbedded masses of clay-ironstone, generally exhibiting cavities or chambers filled with calcareous spar, and hence named *septaria*. The ores commonly used in smelting generally produce from 27 to 40 per cent. of iron; that yielded by the hematite is peculiarly fine in quality, and fit for the manufacture of iron-plate and wire. The principal districts in which iron is made, are South Wales, Staffordshire, Shropshire, Yorkshire, North Wales, and Derbyshire. Of these the three first named are by far the most important; South Wales supplying little less than the half, Staffordshire one-third, and Shropshire probably a ninth part of the whole quantity of iron made in England and Wales. Yorkshire produces the next greatest quantity. Very little iron is made in Northumberland and Durham, as the coal-field of that district is remarkably deficient in ironstone. It is said, however, that at Hexham there is abundance of an ironstone, richer than any hitherto found in the coal-formation, as it will yield 50 per cent. of pure metal. At a former period much iron was made in Kent and Sussex, but since the substitution of coal for wood, in the process of smelting, the manufacture has been entirely transferred to the coal districts; its principal seats at present, are Merthyr-Tydvil, and adjoining places in the counties of Glamorgan, Brecknock and Monmouth; the district included between Wolverhampton, Dudley, and Walsall, in Staffordshire; and Colebrook-Dale in Shropshire.

The mountain limestone is the great depositary of the *lead* found in England, although in the north-east of Wales it also occurs in rocks of older formation. The most productive mines are situate at Allendale in Northumberland, Aldston, or Alston Moor, in Cumberland, and several other places in the upper valleys of the Tyne, the Wear, and the Tees; in the Peak and Kingsfield districts, in the north of Derbyshire; in Flintshire and Denbighshire, the north-east part of Wales; and in the western part of Shropshire. Lead-ore generally contains *silver*, which in some places is by an improved process extracted from it in considerable quantities. *Zinc* also is obtained from the blende, or sulphuret of zinc, associated with the lead; but is commonly made from calamine, its true ore, mines of which are found in the mountain limestone.

Tin is peculiar to the granitic and primary slate-rocks, and in this country is found only in Cornwall and Devonshire. Both these counties, especially the former, have long been famous for their tin-mines, the produce of which is sent to all parts of the world, and is competed with almost only by the tin procured from Banca, an Indian island in possession of the Dutch. Tin is never found in a pure metallic state. Its most common ore, called *tinstone*, an oxide of the metal, occurs either in veins interseeting the rocks we have already mentioned, or else in the form of grains, or water-worn pebbles (named by the miners *stream-tin*) in the sands of rivers and valleys, and some parts of the sea-shore.

Copper is found in granite, and in several of the older primary stratified rocks. In this country the great supply of copper is derived from Cornwall, but there are mines of it in Anglesea, and some other parts of Wales, and in Devonshire and Staffordshire; these, particularly the famous mine in the Parys Mountain, near Amlwch, in Anglesea, and that of Ecton in Staffordshire, were formerly very productive, but they now yield comparatively little. On account of the want of coal in Cornwall, and its abundance in South Wales, the Cornish copper ore is all carried to Swansea to be smelted.

Of the other mineral productions of England, we may enumerate *fossil*, or *rock salt*, vast beds of which, varying in thickness from 4 feet to 40 yards, are included in the upper marls of the new red sandstone, and which are extensively wrought in the neighbourhood of Northwich, in Cheshire; *alum*, which is manufactured in great quantities from the alum shale of the upper lias at Whitby, in Yorkshire; *fuller's earth*, found below the great oolite at Bath, and below the green-sand at Reigate, and other places in Surrey, which last district furnishes the greater part of the quantity used in the woollen-manufactures; *graphite*, or *plumbago*, commonly though improperly denominated black lead, a very rare mineral, the most celebrated mine of which in the world is found at Borrowdale, in Cumberland, in the Cumbrian or older grauwacké system; *antimony*, mines of which occur at Saltash in Cornwall, and Huel Boys in Devonshire; *manganse*, found principally in Devonshire, in the east of Cornwall, and in Warwickshire; lastly, *arsenic*, the oxide of which, used in commerce, is manufactured from the arsenical pyrites, or in reality, the arsenical iron accompanying the tin and copper ores of Cornwall. *Building-stone* is not abundant in England. Sandstone is used as a building and paving stone in all the coal districts, particularly in Cumberland, Northumberland, and Yorkshire; but the most esteemed varieties of building materials, are the *Portland stone*, and *Purbeck marble*, of the south of Dorsetshire, the first of which is an upper oolitic limestone, the other a freshwater limestone, of the Wealden formation; *Killaway rock*, a limestone of the oolitic group; and *Bath stone*, the lower, or great oolite. *Roofing-slate* is extensively quarried from the older grauwacké rocks in the north of Caernarvonshire, particularly near Bangor; in Cardiganshire, and other parts of South Wales; and at Ulverstone in Lancashire.

It is almost needless to add, that *limestone*, fit to be converted into mortar, or used as manure, is widely diffused over England; and that brick and pottery *clays* are found in great abundance in many places. Besides the substances already mentioned, England, from the diversified features of its geognostic constitution, produces a vast variety of other minerals, some of great intrinsic value (as *gold*, &c.;) but as these are found in inconsiderable quantities, they may be regarded only in the light of objects of experiment or curiosity.

The *mineral springs* of England are not numerous, but several of them are in many respects of considerable importance. The *brine*, or *salt springs*, at Northwich, Winsford, Middlewich, Wheelock, Nantwich, and other places in the valleys of the Weaver and Wheelock, in Cheshire, and those at Droitwich in Worcestershire, yield salt in immense quantities. Springs of a similar nature, though not turned to any productive account, are met with at Ashby-de-la-Zouch in Leicestershire, Shirleywich in Staffordshire, Builth or Bualth in Brecknockshire, and at Kingswood, near Bristol. Mineral springs celebrated for their medicinal qualities are found in many parts of England. The principal springs of this class, are those of Bath in Somersetshire; Bristol in Gloucestershire and Somersetshire (the spring being situate in the former county); Cheltenham in Gloucestershire; Tunbridge-Wells in Kent; Epsom in Surrey; Leamington in Warwickshire; Great Malvern in

Worcestershire; Llandrindod in Radnorshire; Matlock and Buxton in Derbyshire; Harrowgate in the West Riding of Yorkshire; and Scarborough, on the coast of Yorkshire. We add the names and temperature of such of the foregoing as are found in the state of *thermal*, or *hot-springs*:—Bath 114°, Buxton 82°, Bristol 74°, and Matlock 68°.

SOIL AND VEGETATION. — The soils in England may be classed under six general divisions, viz. Clay, loam, sand, chalk, gravel, and peat; but from the number and variety of their subdivisions, and their irregular and abrupt transitions, it is difficult to enumerate them, and still more so to mark with precision their positions. The largest tracts of a uniform soil are those in the central and southern districts of Norfolk, and in the *Wealds* of Kent, Surrey, and Sussex. The soil of the former consists of a rich clay, producing luxuriant crops of wheat; that of the Wealds is of a stiff clayey nature, fruitful, but unwholesome, on account of its great moisture. Red loam prevails in the county of Rutland; and it also passes with more or less of continuity into Nottinghamshire in a north-eastern, and into Devonshire in a south-western direction. The sandy tracts are far less extensive in England than in France. Many portions of Surrey are covered with beds of sand, particularly Bagshot Heath, in the north-west of the county. The same deposit occurs in several districts of the eastern and southern counties. It is met with also in a very pure state at Alum Bay and Headen Hill, at the western angle of the Isle of Wight. Peat soil is common in the north; but it is also observed, although in no great extent, in the south and south-west. An estimate of the extent of surface in England and Wales, either under cultivation or capable of being rendered productive, and of that which is unfit for the production of grain, vegetables, hay, or grasses, will be found in the following table.

	Arable and Gardens.	Meadows, Pastures, and Marshes.	Wastes capable of Improvement.	Wastes incapable of Improvement.	Summary.
	Square Miles.	*Square Miles.*	*Square Miles.*	*Square Miles.*	*Square Miles.*
ENGLAND,	16,020	24,030	5,397	5,089	50,536
WALES,	1,391	3,478	828	1,727	7,424
	17,411	27,508	6,225	6,816	57,960

The vegetation of England differs but little from that of the more genial countries of northern Europe. The extreme humidity of its climate, however, renders it better adapted for the growth than the ripening of the productions of the earth; hence the almost perpetual verdure of surface which, though familiar to the English themselves, so invariably excites the admiration of foreigners. Most of the trees valued for their timber or bark are found in England. The most common are the oak, ash, elm, beech, chesnut, larch, Scotch fir, and other varieties of the pine tribe; the maple, called also the plane-tree or sycamore, the lime, birch, alder, yew, hazel, willow, poplar, and, in the southern portion of England, the walnut and mulberry. The smaller trees and shrubs are the thorn, hornbeam, holly, box, black-thorn, and service. In the orchard are found the cherry, apricot, plumb, pear, and apple trees; while the produce of the garden includes a great variety of the smaller fruits and pot-herbs, many of the most generally used and valuable of the latter of which were first transported to England from Holland in the reign of Henry the Seventh. The vine was formerly cultivated in England; and, during the thirteenth and fourteenth centuries, wine was made in considerable quantities. There are still in Devonshire two or three vineyards, from the produce of which wine is made. Wheat is the principal object of culture in the south-east; barley is raised chiefly in the midland and eastern counties; and oats in the fenny tracts of the latter, and also in the north. Rye is not so common as formerly. Some partial attempts were made a few years ago to introduce the culture of a dwarf species of maize or Indian corn; but the cloudiness of the atmosphere proved unfavourable to the ripening of the grain. Peas, beans, tares, clover, and saintfoin, are spread over almost every district. The potato thrives in Lancashire and Cheshire, and the turnip in Norfolk, from which county its culture has extended all over the kingdom, and principally to the north. Hops are cultivated in Kent, Surrey, Worcestershire, and Herefordshire; those of Farnham, in Surrey, are reckoned the best. Hemp and flax are reared in inconsiderable quantities, although of excellent quality, in Suffolk and Lincolnshire. Rape is much cultivated in the last named county, and also in Cambridgeshire.

England, from a very remote period, has been celebrated for its extensive *forests*. These, however, gradually yielding to the demand for timber and the progress of

agriculture during the last two centuries, have now in a great measure disappeared. As many of them still give names to districts of some note, we shall here enumerate several of the most remarkable, commencing with those which are the property of the Crown.

The existing royal forests, stated in the order of their importance, as sources of revenue, are—*New Forest*, *New Park*, and *Parkhurst*, in the south west of Hampshire; *Dean Forest*, and *Highmeadow Woods*, on the west of the Severn in Gloucestershire; *Whittlebury* and *Saleey*, in the south-east of Northamptonshire; *Gillingham*, *Meopham*, and *Shooter's Hill* woods, in the north-west of Kent; *Alice Holt*, *Woolmer*, and *Bere*, in the south-east of Hampshire; *Whichwood*, in the south-west of Oxfordshire; *Hainault*, or *Waltham*, in the south-west of Essex; *Windsor*, in the south-east of Berkshire; *Chopwell* woods, in the north of the county of Durham; *Delamere*, in the hundred of Eddisbury, in Cheshire; *Sherwood*, or *Shirwood*, in the central or western part of Nottinghamshire; and *Lanercost Priory Woods*, in the north-east of Northumberland.

Of the other ancient forest districts, many of which were formerly crown possessions, few remain in a state of woodland, and these chiefly in the south and west of England. The most noted are—*Martindale*, *Milbourn*, *Lime*, and *Stainmore*; the first in the north, and the remaining two, in the east of Westmoreland; *Wyredale* and *Bowland*, in the central and western part of Lancashire, bordering on Yorkshire; *Galtrees*, *Pickering*, *Hardwick*, *Arkengarthdale*, *Knaresborough*, *Wharfdale*, *Swynden*, *Okeden*, *Harlow*, *Fulwith*, *Coverdale*, and *Hatfield Chase*, situate principally in the North and West Ridings of Yorkshire, also the *Ainstey of York*, between the Ridings; *Peak Forest*, in the north-west of Derbyshire; *Needwood*, in the north-east of Staffordshire; *Charnwood*, in the north-west of Leicestershire; *Wyre*, in the north-west, *Feckenham*, in the central and eastern part, and *Malvern Chase*, in the south-west of Worcestershire; *Arden*, in the central and western parts of Warwickshire; *Leighfield*, in the south-west of Rutlandshire; *Rockingham*, in the north-west of Northamptonshire; *Bernwood*, in Bucks; *Epping*, in the south-west of Essex; *Enfield Chase*, in the north-east of Middlesex; *Exmoor*, in the south-west of Somersetshire; *White-Hart*, in Dorsetshire; *Bradon*, in the north, and *Savernake*, in the central and eastern parts of Wiltshire, also in the same county, *Blackenore* or *Melksham*, *Pewsham* or *Chippenham*, *Pannshill*, *Melshett*, and *Cranbourne Chase*; lastly, *St. Leonard's*, and *Ashdown*, in the north of Sussex.

The most extensive of the royal forests are, New Forest (66,942 acres), Dean Forest (23,015 acres), Woolmer Forest (5,945 acres), Whittlebury Forest (5,424 acres), Windsor Forest (4,402 acres), Delamere Forest (3,847 acres), and Whichwood Forest (3,709 acres.) The entire extent of the royal forests, enclosed and bearing oak, exceeds 50,000 acres, of which Dean Forest includes 11,000, New Forest 6,000, Windsor Forest 4,402, Whittlebury Forest 3,895, and Delamere Forest 3,847 acres. It is difficult to estimate the entire extent of the forests and woodlands in England. In the French abridgment of Malte Brun's Geography it is stated, though on what authority we are not aware, that the whole woodlands of Great Britain and Ireland cover 1,480,000 arpens, equal to 1,869,952 acres, or 2,921 square miles. This estimate, if at all correct, would show that England contains a very great extent of timber-bearing land, as the whole extent of natural woods and plantations in Scotland does not exceed from 950,000 to 1,000,000 acres, and as Ireland, though formerly very thickly wooded, is now comparatively destitute of timber.

ANIMALS.—As the animal kingdom in England is nearly similar to that of other countries between corresponding parallels, the various species of which it is composed need not be minutely enumerated. The wolf and wild boar have long since been extirpated; and the beaver, and probably the wild ox, have also disappeared* The stag, in its natural state, is very rare, and the few of the species that still remain are found only on the borders of Cornwall. The fallow-deer kept in parks is of foreign origin. The most common game-animals are the hare, partridge, and pheasant. The red grouse is found in the north of England; the black cock in the New Forest, in Wales, and also in Hampshire; the ptarmigan occasionally on the lofty hills of Wales and Cumberland; and the bustard, although very scarce, still exists on Salisbury Plain, in the neighbourhood of Dorchester and Newmarket, and in the Yorkshire Wolds. The wild duck abounds in the fens of Lincolnshire. With regard to the migratory birds, the turtle-dove appears in greater numbers in Kent than in any other county. The nightingale, common in the south, is rare in Yorkshire; and it is believed is not heard to the north of that county. The woodcock is gradually disappearing before the progress of cultivation; the starling, however, still appears in its favourite haunts, particularly in the fens of Lincolnshire, and that in perhaps denser flocks than any of the other birds. Salmon, the most valuable of the fish that frequent the English rivers, is more abundant in the Tweed than in any of the other streams. Herrings are taken in many parts of the eastern coasts, and principally in the neighbourhood of Yarmouth; they are found also on the western coast, but not in so great numbers. The mackerel fisheries are confined to the coasts of Norfolk and Hampshire. To the north of Yarmouth mackerel are not so plentiful; and they are neglected to the westward of Hampshire, on account of the greater importance of the pilchard fishing, which is carried on along the coasts of Dorset, Devon, and Cornwall. Oysters are found on many parts of the Channel and Welsh coasts, particularly

* The type of the English ox is said to be preserved at Chartley Park in Derbyshire, and at Chillingham Castle in Northumberland.

in the line of coast between Chichester and Southampton, and in the neighbourhood of Poole in Dorsetshire, and Port Eynon or Einion in Glamorganshire, from the latter of which places the supply required for the Bristol, Bath, and Gloucester markets is procured. They are also bred and fattened in vast numbers for the London market in beds formed at the mouths of the rivers Crouch, Blackwater, and Colne in Essex, the channel of the Swales in Kent, and in several other places within the estuaries of the Thames and Medway, the fish used in these operations being brought from Wales, the Channel coast, the island of Jersey, and, of late years, from the Mid-Lothian side of the Firth of Forth in Scotland. Cod and lobsters are taken on the north-eastern coast; and of the turbot fisheries, the most important are those on the coasts of Norfolk, Suffolk, Essex, and different parts of the Channel. The domestic animals of England are, generally speaking, superior to those of any other country. The race-horse has been improved with the best blood of Arabia. Of the draught-horses, the three best sorts are, the Cleveland bay, bred in many parts of Northumberland and Durham, as well as in the vale or district in the north-east of Yorkshire, from which its name is partly derived; the Suffolk punch, generally used in the light and sandy lands of Norfolk and Suffolk; and the old English black or Lincolnshire cart-horse, common in Leicestershire, Northamptonshire, Lincolnshire, and some of the neighbouring counties. The oxen of Devonshire have long been famous both for fattening readily, and for their power as draught animals. From them are derived the *old red cattle* of Gloucestershire; also the Hereford and Sussex breeds, the latter of which are supposed to be the best in the kingdom for draught. The native country of the long and short-horned oxen is to be found between the northern limits of England and the Trent and Mersey; from the former have been derived a new and valuable variety called the Leicester-breed, and the latter includes the Tecsdale, Lincoln, Holderness, and Tweedside oxen, the largest of any in Britain. Sheep are divided into two classes, the long and the short-woolled, the fleece of the former being better adapted for woollen goods, the latter for the fabrication of worsted. The long-woolled sheep, although common in many districts, are more numerous on the eastern and southern coasts than on the western coast, or in the central counties; the short wools are more scattered, and they are divided into different kinds, viz. the Norfolk, South Down, Wiltshire, Herefordshire, the heath-sheep, and the Cheviot or mountain breed. The ordinary varieties of pigs are the Berkshire, the Gloucestershire, and the Rudgwick, so called from a town of the same name in Sussex.

PEOPLE AND LANGUAGE. — At the period of the Roman conquest, in the first century of the Christian era, England was possessed by various tribes, who appear to have belonged chiefly to the Cymry race, supposed by some to have been Celts, and by others an intermediate people between the Gothic and the Celtic stocks. Their descendants still form the bulk of the population of Wales and Cornwall. Their language, however, has been completely extinct in Cornwall for nearly a century; but in Wales it is still employed by the rustic population. At the same epoch, the south-eastern counties were occupied by the Belgæ, a branch of the great Teutonic family, from Gaul, who had dispossessed the Cymry, and driven them into the interior. After the downfall of the Roman dominion, the south-eastern and midland counties were subdued and occupied by the Jutes and Saxons, and Norfolk and Suffolk by the Angles; while the northern counties were frequently overrun, sometimes possessed, and largely colonized by the Danes; all of them kindred families of the Gothic or Teutonic race. In the eleventh century, England was subdued by the Norman-French, who gradually intermixed with the Saxons, Angles, Jutes, and Danes, and formed, by the intermixture, the modern English people, and the English language. The people of many counties had, till lately, each a dialect peculiar to themselves; but, by the general diffusion of education, the language is now becoming nearly uniform over the whole kingdom. The groundwork of the language is still Saxon; but the words of Saxon origin have, of late, been rapidly giving way to others of French, Latin, and Greek extraction. In short, the modern English people are of a very mixed origin, and their language, from that circumstance, contains probably a greater number of different elements than any other of the modern tongues. For farther illustrations of these topics, our readers are referred to the account of races and languages already given in the general description of Europe. (See *ante*, p. .)

Before concluding these remarks, however, we must advert to a process of immigration now in action, which has already had a great, and promises to have a still greater influence on the blood and character of the people both of England and of Scotland, viz. the late extraordinary influx of Irish or Celtic labourers into Britain.

It is believed that at present about a fourth part of the population of Manchester and Glasgow consists either of native Irish or their descendants; and in various other places the proportion is still greater. The pernicious consequences, both as regards the condition and habits of the British labourer, which are likely to follow this vast influx of necessitous individuals, have been forcibly pointed out by Mr M'Culloch, in his "Statistics of the British Empire."

POPULATION.—The only means of estimating the amount of the population of England and Wales, prior to 1801, are the enumerations in Domesday Book, the returns obtained under the poll and hearth taxes, and the registers of births and deaths; but none of these afford data from which it can be ascertained with much certainty. Mr M'Culloch conjectures, that at the era of the Conquest the population of England and Wales may have amounted to about 2,150,000; Mr Chalmers estimates its amount, at the epoch of the poll-tax in 1377, at 3,350,000; and the celebrated political arithmetician, Gregory King, founding his estimates on the returns obtained under the hearth-tax previous to 1696, states the entire population that year to be 5,500,000. Since 1801, a regular census of the population has been taken decennially. The following Table exhibits the gradual progress of the population since 1700, the whole of the last century being only conjectural, as computed by Mr Howlett:

1700, - 5,475,000	1750, - 6,467,000	1801, - 8,872,980
1710, - - 5,240,000	1760, - - 6,736,000	1811, - 10,150,615
1720, - 5,565,000	1770, - 7,428,000	1821, - 11,978,875
1730, - - 5,796,000	1780, - - 7,953,000	1831, - - 13,897,187
1740, - 6,064,000	1790, - 8,675,000	1841, - 16,006,884

The following summary of the last four enumerations of the population, including the army, navy, &c., shows the rates of increase in each decennial period:—

	1811.		1821.		1831.		1841.	
	Number.	*Increase per cent.*	*Number.*	*Increase per cent.*	*Number.*	*Increase per cent.*	*Number.*	*Increase per cent.*
ENGLAND,.....	9,538,827	14.5	11,261,437	18.0	13,091,005	16.2	15,095,843	15.3
WALES,.....	611,788	12.9	717,438	17.2	806,182	12.3	911,041	12.8
Army, Navy, &c.	640,500	...	319,300	...	277,017	...	220,559	...
Total,.....	10,791,115	14.4	12,298,175	13.9	14,174,204	15.2	16,227,443	14.4
Females, ...	5,289,884	14.3	6,153,072	16.3	7,125,997	15.8	8,203,986	14.9

The following Table exhibits the total number of persons living in the United Kingdom at the enumeration of 1841:—

	Males.	*Females.*	*Total number of Persons.*	*Males 20 years and upwards.*
ENGLAND,.....	7,298,749	7,673,606	14,972,355	3,874,371
WALES,.....	447,145	463,896	911,041	232,913
SCOTLAND,.....	1,238,669	1,378,322	2,616,991	627,790
Army, Navy, &c.....	220,559	.....	220,559	.....
Total of Great Britain, ...	9,205,122	9,515,824	18,720,946	4,735,074
IRELAND—				
Leinster,.....	963,747	1,009,984	1,973,731	475,775
Munster,.....	1,186,190	1,209,971	2,396,161	555,226
Ulster,.....	1,161,797	1,224,576	2,386,373	630,837
Connaught,.....	707,842	711,017	1,418,859	318,802
Total of Ireland,.....	4,019,576	4,155,548	8,175,124	1,980,640
Total of Great Britain and Ireland,..	13,224,698	13,671,372	26,896,070	6,715,714
Island of Guernsey, &c.....	12,723	15,578	28,301	6,916
Jersey,.....	21,331	25,942	47,273	11,217
Man, ...	22,950	24,964	47,914	11,619
Total of Channel Islands, &c.....	57,004	66,484	123,488	29,752
Total of United Kingdom,.....	13,281,702	13,737,856	27,019,558	6,745,466

Mr M'Culloch states as the result of the census of 1841, that nearly a third part of the population of England and Wales resides in towns having a population of 10,000 souls and upwards; and that while during the 10 years ending with 1840, the entire population increased at the rate of 14.4 per cent., that of the great towns increased at the rate of 20.2 per cent. The rate of increase of the rural population, including the small towns and villages, during the same period, was found to be only 11.2 per cent., or 9 per cent. under the increase of the great towns.

The following Table exhibits the divisions of occupations among the population of Great Britain and its islands, as ascertained at the taking of the census in 1841:—

Occupations &c., 1841.	*England and Wales.*	*Scotland.*	*Islands in British Seas.*	*Total.*
Commerce, Trade and Manufactures,	2,619,206	473,581	17,589	3,110,376
Agriculture,	1,261,448	229,337	8,493	1,499,278
Domestic Servants,	999,048	158,650	7,535	1,165,233
Labourers,	673,922	84,573	3,373	761,868
Persons in Government Civil Service,	14,088	2,777	94	16,959
Persons of independent means,	445,973	58,291	7,176	511,440
Educated Persons following miscellaneous pursuits,	123,878	18,099	859	142,836
Parochial, Town, Police and Church Officers,	22,125	3,085	65	25,275
Army,	36,738	4,631	840	42,204
Army abroad and in Ireland,	... ...	... ...	... ...	89,230
Navy,	95,193	24,359	2,279	121,831
Navy and Merchant Seamen afloat,	... ...	... ...	... ...	96,799
Professional, as Clergy, Law, and Physic,	3,041	9,709	434	63,184
Pensioners, Paupers, Lunatics, and Prisoners,	176,206	21,690	1,173	199,069
Pensioners, &c., afloat,	... ...	... ...	... ...	957
Residue of Population not included in above returns,	9,390,866	1,531,402	74,130	10,996,398
Residue of Population afloat,	... ...	.. ...	... ...	1,467

In England, at the taking of the census of the population in 1841, it was found that there were on the average 297.5 persons to every square mile, or 2.150 acres to each person, and 5.4 persons to every house. In Wales there were 275.1 persons to every square mile, or 2.326 acres to every person, and 5.4 persons to every house.

A general and uniform system of *registration of births, deaths, and marriages* was established by the legislature in 1836. In the annual report of the Registrar-general, published in 1848, the returns were made up to the end of the year 1846; and from these it appears, that during the 9½ years reported on, there had been registered over England and Wales, 1,209,172 marriages, 4,836,911 births, and 3,326,557 deaths, thus showing an excess of registered births over the deaths, during that period, to the extent of 1,510,354. These numbers give a mean of 127,281 marriages, or 254,562 persons married annually over England and Wales, 509,148 births annually, and 350,163 deaths annually. As compared with the population, these numbers show that one marriage occurs annually out of every 126 persons (or that one person is married annually out of every 63 persons); that there is one birth annually for every 31 persons living, and that one dies annually out of every 46 persons.

Marriages. The following Table exhibits some facts of interest relative to the marriages celebrated in England and Wales from 1841 to 1846:—

Years.	*Total Marriages.*	*According to Rites of Established Church.*	*Not according to Rites of Established Church.*				*Not of Age.*		*Signed with Marks.*	
			In registered Places of Worship.	*In Registrar's Office.*	*Quakers.*	*Jews.*	*Men.*	*Women.*	*Men.*	*Women.*
1841	122,496	114,371	5,882	2064	66	113	5362	16,285	39,954	59,680
1842	118,825	110,047	6,200	2357	58	163	5387	16,003	38,031	56,965
1843	123,818	113,637	7,152	2817	61	151	5511	16,403	40,520	60,715
1844	132,249	120,009	8,564	3446	55	175	5515	17,410	42,912	65,073
1845	143,743	129,515	9,997	3977	74	180	6287	19,376	47,665	71,229
1846	145,664	130,509	10,696	4167	68	224	6313	20,001	47,488	70,145

In 1845, 1846 and 1847, the marriages celebrated in Roman Catholic chapels numbered respectively 2280, 2816, and 3027.

Births. In the seven years, 1839-45, there were 1,863,892 male, and 1,772,491 female children born alive. In other words, to every 10,000 girls, 10,515 boys were born, or 20 boys to 19 girls. Though this was the proportion born in wedlock, it is singular that the proportion of boys was smaller out of wedlock, being as 26 boys to 25 girls. The proportion of illegitimate children born annually amounted to about 6½ per cent. of the total births.

Deaths. Though over all England and Wales the deaths from 1838 to 1845 inclusive were in the proportion of 2.176 per cent., or one death out of every 46 persons living, the proportion varied much in different counties, towns, and districts. Thus, of the 11 registration divisions into which England and Wales is partitioned, the healthiest is the south-eastern, including Kent, Sussex, Hampshire, Berkshire, and part of Surrey, where the mortality during the above years was in the low proportion of 1.901 per cent. per annum, or one death out of every 53 living. The most unhealthy, on the other hand, was the north-western division, consisting of Cheshire and Lancashire, the deaths in which were in the high proportion of 2.591 per cent. per annum, or one death out of every 39 persons living. The country population was found much more healthy than that in towns, and the healthiness of these last was greatly regulated by the density of the population, and the relative condition as to cleanliness, drainage, &c. Thus in the country, the mortality varied from 1 in 48 living, to 1 death annually out of every 53 living; while in towns, the mortality varied from one death annually out of every 29 inhabitants, as in Liverpool, to one death annually out of every 41 inhabitants, as in London. As to density of population affecting the public health, one instance may suffice. In Liverpool, in Rodney Street and Abercromby Wards, where there are about 58 square yards to every inhabitant, the deaths are annually one out of every 41 persons. In Vauxhall and St Paul's wards, where there is an allowance of only 19½ square yards to every inhabitant, the deaths are one annually out of every 27 of the population.

The following Table, computed from the Registrar-general's reports, shows the proportion dying annually at the subjoined ages, out of every 100 of the living population at the same ages :—

Ages.	*Males.*	*Females.*	*Ages.*	*Males.*	*Females.*
Under 1 year,	20.516	15.445	25 and under 35 years,	0.971	1.011
1 and under 2 years,	6.708	6.397	35 — 45	1.251	1.243
2 — 3	3.534	3.493	45 — 55	1.778	1.550
3 — 4	2.521	2.482	55 — 65	3.143	2.784
4 — 5	1.855	1.832	65 — 75	6.617	5.886
5 — 10	0.926	0.900	75 — 85	14.390	13.201
10 — 15	0.505	0.548	85 — 95	29.640	27.566
15 — 25	0.806	0.834	95 and upwards,	42.672	40.795

From the same reports we learn that out of every million of persons living, there die annually 22,176 persons, and out of this number the various classes of disease cut off the following proportions :—*Epidemic and contagious diseases* cut off 4478 persons, thus amounting to more than the fifth of the total mortality. Of these diseases smallpox cuts off 698 persons, measles 553, scarlet fever 818, hooping-cough 544, and typhus fever 1094. *Diseases of uncertain or variable seat* cut off 3073 persons, 837 of these dying from dropsy, 175 from cancer, and 1094 from debility at birth. *Diseases of the nervous system* cut off 3275 persons annually out of every million living, of which number 513 die from water on the brain, 361 from apoplexy, 343 from paralysis, and 1195 from convulsions. *Diseases of the respiratory organs* cut off 6023 persons, of which number 1195 die from inflammation of the lungs, and 3913 from consumption. *Diseases of the heart and bloodvessels* cut off 267 persons. *Diseases of the organs of digestion* cut off 1395 persons, of which number 327 die from teething, and 440 from inflammation of the bowels. *Diseases of the kidneys and urinary organs*, cut off 107 persons. *Child-birth, and diseases of the Uterus* cut off 227 persons, of which 193 are from child-birth. *Rheumatism, spine, and joint diseases* cut off 126 persons. *Diseases of the skin, &c.* cut off 31. Old age cuts off 2377 persons annually out of every million persons, intemperance 12, starvation 10, and violent deaths 757 persons annually out of the same number living.

RELIGION, AND ECCLESIASTICAL DIVISIONS. —The religion of England is, like the people themselves, very various in form and doctrine. The Established National Church is a compound of Calvinism and Arminianism in doctrine, and Episcopalian in its ritual and form of government. Roman Catholics are found in considerable numbers in different districts of the country, and Protestant dissenters of every variety abound everywhere. There is also a number of Jews in London, and a few in the other large towns. All sects and denominations enjoy the utmost freedom of opinion; and, with the exception of the Jews, have the same political privileges. The religious tenets of these various bodies are described in a former portion of this work. See p. 118, *et seq.*

In respect to the *Established National Church*, England and Wales are divided into into two archiepiscopal provinces; which are subdivided into two archbishoprics, and twenty-six bishoprics. Each of these again is farther subdivided into archdeaconries, each archdeaconry into deaneries, and each deanery into parishes—the number of the last amounting to 10,674. The *province of Canterbury* comprises the archbishopric of that name, and the bishoprics of London, Winchester, Ely, Lincoln, Rochester, Lichfield and Coventry, Hereford, Worcester, Bath and Wells, Salisbury, Exeter, Chichester, Norwich, Gloucester and Bristol, Oxford, Peterborough, in England; with Bangor, Llandaff, St. Asaph, and St. David's, in Wales. The *province of York* comprises the archbishopric of York, and the bishoprics of Carlisle, Chester, Durham, Ripon, Sodor and Man, and Manchester. All the archbishops and bishops, except the Bishop of Sodor and Man, are Lords of Parliament. The Archbishop of Canterbury is styled Primate and Metropolitan of all England; the Archbishop of York, Primate and Metropolitan of England only. Besides their function as primates and archbishops, both of them perform the ordinary duties of bishops within their respective dioceses of Canterbury and York. The possessions attached to the different sees, whether consisting of land or other property, differ in no respect from lay possessions, and it is in right of these that the prelates sit in Parliament.

From returns laid before Parliament, it appears, that the net *annual revenue of the Established Church* applicable to the support of the clergy, is nearly three millions and a half sterling, the aggregate amount of the *incomes of the prelates* (27 in number) being £160,290; of the dignitaries, and other clergy connected with the *cathedrals and collegiate churches*, £252,999; and that of *incumbents of benefices*, £3,004,721. Of the several archiepiscopal and episcopal sees, the largest emoluments are attached to those of Canterbury and Durham, and the smallest to that of Llandaff, the annual revenue of the two former being severally £19,182 and £19,066, and that of the latter £924. These and similar inequalities, however, are to be removed as soon as that can be done without prejudice to existing holders. Deductions are to be made from the revenues of the wealthier sees, and those at present under £4,000 a-year are to be augmented to that amount. The incomes of the cathedral deans and prebends (228 in number) vary from £4,800 to £50 per annum, averaging on the whole about £800 a-year. The *number of benefices* is 10,540, dividing equally among which the income we have already stated (£3,004,721), an average would be got of £285. Their classification is as follows: —

Incomes.	*Benefices.*	*Incomes.*	*Benefices.*
Under £50	297	£400 and under £500	830
£50, and under 100	1,629	500 — 750	954
100 — 150	1,602	750 — 1,000	323
150 — 200	1,354	1,000 — 1,500	134
200 — 300	1,979	1,500 — 2,000	32
380 — 480	1,326	2,000 and upwards,	18

In the Church Commissioners' Report, the number of *stipendary curates* is stated to be 5,230; of these 1,006 were employed by resident, and 4,224 by non-resident incumbents. Their stipends are, of course, deductions from the income of the benefices.

The patronage of benefices in England and Wales is variously distributed: the Crown presents to 952, the archbishops and bishops to 1,248; the deans and chapters, or ecclesiastical corporations, aggregate, to 787; dignitaries, and other ecclesiastical corporations, sole, to 4,851; universities, colleges, and hospitals, not ecclesiastical, to 721; private owners, to 5,096, and municipal corporations, to 53.

There were throughout all England and Wales, in 1831, 11,825 *churches and chapels belonging to the establishment*, and 8,446 *dissenting congregations*. Of the latter 416 were Roman Catholic, 197 Presbyterian, 1840 Independent, 1201 Baptist, 427 Calvinistic Methodist, 2,818 Wesleyan Methodist, 666 Methodist of other descriptions, 396 were Quaker, and 453 consisted of Home Missionary and other stations. Many additional places of worship must have been opened during the intervening period; but in the absence of any collected account of these additions, and of statements of the attendance in 1831, it is impossible to frame what, in many respects, would be very desirable, viz. an accurate estimate of the *number of individuals belonging to the established church and the dissenters*. Mr. M'Culloch is inclined to think that the entire number of dissenters in England and Wales does not exceed 2,700,000, or at most 3,000,000. The latter number is no doubt pretty near, though perhaps under the mark. The Roman Catholics amount at least to 600,000, and the Methodists

of every description are known to exceed 1,200,000. If we accede to the claims of the "Orthodox Dissenters of the Three Denominations" (as the associated body of Presbyterians, Baptists, and Independents are called) to have an attendance at least equal to the Methodists, and add 150,000 as the probable number of the remaining dissenters, we shall have a total of 3,150,000. On the whole, we shall not greatly err if we adhere to the larger number in Mr. M'Culloch's estimate; and let it be remarked, that this indicates the attendance, in dissenting places of worship, of a third part of the entire population aged fifteen and upwards.

EDUCATION.—There is no national establishment for elementary education in England, everything having been left to private exertion, or individual beneficence. Boys receive a classical education, either in the smaller schools established in every town of consequence throughout the kingdom, or at the great public schools; the principal of which are at Eton, Westminster, Winchester, Harrow, Charterhouse, and Rugby. These seminaries, at present so expensive, and attended only by youths of the highest families, had their origin in funds bequeathed for the education of poor scholars. These have served as the bases of costly superstructures, each school having attracted, by the advantage of its situation, or the celebrity of its teachers, a large number of pupils in independent circumstances. In each great school, however, a proportion of the scholars are still placed on the foundation, and educated gratuitously. These schools are all preparatory to the great National Universities, the two most ancient of which are those of Oxford and Cambridge. To these have lately been added the University of London, consisting of two colleges, founded and endowed by private subscription, and named the University College, and King's College; the Durham University, founded and endowed by the Bishop and Chapter of Durham; and St. David's College, at Lampeter, in South Wales, founded by Dr. Burgess, late Bishop of St. David's, for the education of Welsh clergymen. There are, besides, various colleges established by the Dissenters for the education of the clergy and other members of their own body; those of Haileybury, and Addiscombe for young gentlemen destined for the East India Company's service; the Royal Military College at Sandhurst; a collegiate institution at Liverpool, and several others.

No country in the world can rival England in the magnificence of her academical buildings. In Oxford and Cambridge, every college possesses a large, commodious, and generally an elegant structure; University College, London, consists also of a large and costly building; and its rival, King's College, forms the eastern wing of the large pile of building called Somerset House. These two were founded recently by private subscription; but the colleges of Oxford and Cambridge have in the course of ages, acquired large funds and extensive estates, the destination of which is regulated by the bequest of the donor, and by established usage. Part of the funds is given to the students under the name of exhibitions or scholarships; part to the master and fellows; and a further part consists of church livings, which devolve in succession on the fellows, and remove them from the University. Oxford has nineteen colleges and five halls; Cambridge has twelve colleges and four halls. A hall is a minor college, an academical establishment not incorporated or endowed, but possessed of exhibitions, or other provisions for students. The entire annual revenue of the University of Oxford is £174,670; that of Cambridge, £149,268. One of the sources of the revenues of the two senior Universities is the profits of their printing-presses and book trade. These, on the most moderate computation, may be stated at £10,000 per annum for Oxford, and half that sum for Cambridge. The annual incomes derived from the revenues of Oxford and Cambridge are, on the average of both Universities, thus apportioned: Heads of Colleges, £754.3; Fellows, £205.3; University Scholars, £46.2; College Scholars, £15; Professors, £184.2; and Lecturers, £98.7.

"The total incomes," Mr. Jones observes, "of the Universities of Great Britain and Ireland (exclusive of the Universities of London and Durham) may be estimated at £500,000; and if to this be added the tuition money and the value of the benefices, the total amount disposable by the Universities is about £800,000 per annum, which is in reality only a small sum when compared either with the annual budget and revenues of the country, or with the paramount importance of superior education to a great and intelligent nation."*

In England and Wales, *primary instruction* is furnished principally by "Sunday Schools," of the class first established in Gloucester in 1781 by the benevolent efforts of Mr. Robert Raikes, a printer, of that place,—by the schools under the superin-

* Statistics of the Universities of Great Britain, read before the British Association at Newcastle, 1838.

tendence of the "Society for promoting the Education of the Poor in the principles of the Established Church," — and by those belonging to the "British and Foreign School Society." The Sunday schools are attended both by children and adults; and though intended principally for the communication of religious instruction, in many of them reading and writing are also taught. The National Schools are conducted on the principles of the Madras system, devised by the late Dr. Bell; the British and Foreign Society adopt the system of Joseph Lancaster, through whose exertions the society originated in 1810. The former society is, as may be inferred from its title, supported only by members of the Established Church, and the religious instruction given in its schools is conformable. The latter consists both of churchmen and dissenters, and no catechism or creed is allowed to be used in any of its schools. It is said, that at present upwards of 1,100,000 children attend the day and Sunday schools of the National Society; but the number of children attending these and other schools has of late been the subject of many conflicting statements. Nor is the information to be derived from the most recent returns to Parliament of a more precise nature, so very imperfect is the administrative machinery through which these were obtained. According to the returns made to the Education Inquiry in 1833, at which period the population was estimated at about 14,300,000, and the number of children between the ages of three and fifteen at 4,294,000, the number receiving instruction in Sunday schools was 1,548,890, and in day-schools 1,276,947; the latter number, however, is for the most part made up of the children attending Dame and common Day-schools, where the instruction conveyed is of the most worthless, and, in some instances, most pernicious description. On the whole, it may be remarked, that in respect to general education, England falls short of many of the other European states, especially such as profess a nearly kindred protestant faith.

Since the first edition of this work was published, Government have taken up the question of Education. It cannot be called a National Establishment, as it bestows the power, in all religious sects, to request aid for the erection and tuition of their Schools.

The following annual cost of Establishments, &c., for the repression of crime, may be contrasted with the estimate of the sums voted in 1848 by the House of Commons for Public Education in Great Britain:—

Annual Cost of Establishments, &c., for the Repression of Crime.

Rates paid by Counties in England and Wales,	L.150,038
Paid by Votes of Parliament,	1,021,646
City of London for Police,	41,351
Criminal Prosecutions in Scotland,	80,289
Do. do. Ireland,	599,757
Cost of Police defrayed by Corporate Towns in England and Wales,	186,120
	L.2,079,193

The cost of the judicial establishments of the country is not included in the above, nor what is paid in Scotland by the burghs and counties in maintaining their police.

Estimate of the Sum to be voted for Public Education in Great Britain in 1848.

For the Erection of Schools,	L.52,000
„ Inspectors of Schools,	17,000
„ Pupil-Teachers and Monitors,	20,000
„ Allowance to Teachers for training Pupil-Teachers and Monitors,	9,000
„ Augmenting the Salaries of Schoolmasters, and Students who have received the necessary Certificates of Merit,	20,500
„ the Erection of Normal Schools,	10,000
„ Grants towards the supply of Books to Schools,	10,000
	L.138,500

The amount of *public charity funds in England and Wales applicable to educational purposes* is considerable; but until the investigations of the Commissioners of Inquiry into Public Charities are completed, it cannot be accurately stated. By the latest report of the Commissioners (1835), in which, however, nine opulent English counties are omitted, it appears that a revenue of £197,248 annually is derived from property devoted exclusively to the support of school education.* This revenue it is supposed might, under proper management, be nearly doubled. The subjoined table exhibits the amount of the *government grants in aid of primary education* in each of the following years:—

	1834.	1835.	1836.	1837.	1838.	*Total.*
Through the National School Society, . .	£11,081	£13,002	£17,130	£11,456	£17,041	£69,710
Through the British and Foreign School Society, ... *	9,796	7,168	5,281	5,810	6,090	34,145

GOVERNMENT.—This has been usually called a limited monarchy; but, in fact, the sovereignty of Britain is vested in three co-ordinate powers:—an hereditary king or queen; a House of Lords, partly hereditary, partly appointed by the Crown; and a House of Commons, consisting of representatives elected periodically by the inhabitants of the different counties, cities, and burghs. The *King* still possesses ostensibly many of the powers, privileges, and prerogatives of the old English monarchs; but the exercise of these is so completely under the control of Parliament, that, in point of fact, the King cannot interfere in any public measure without the consent of the legislature. The King has only the name of sovereign, while the actual sovereignty is vested in Parliament; so that the government appears to be in reality a republic, at the head of which is a chief magistrate, differing essentially from the Doges of Venice, and the Presidents of America, in little else than in being hereditary. The King has nominally the appointment of the Ministers of State, and the other principal public functionaries —the command of the national forces, and the appointment of their officers — the power of making war or treaties of peace, and various other necessary duties; but all these are done by and with the counsel of responsible Ministers. The control of the public purse is vested in the Commons, and it has long been a recognised principle, that no ministry can continue in office when opposed by a majority of that House. For the purpose of securing such a majority, the acting government, for a long series of years, had recourse to underhand means, or, as it was called, to influencing the Members; but since the reform of the Commons House of Parliament, in 1832, a new order of things has been introduced, and the Commons now virtually appoint the ministry, instead of submitting, as formerly, to their dictation and control.

The King unites the dignity of chief magistrate with that of head of the church; and, in the exercise of his public functions, is assisted by different councils. The first of these is composed of the Peers of the kingdom, who are *by birth counsellors of the Crown*, and whom, as such, the King may assemble for consultation in all affairs of great national importance. This council, however, now exists only in theory; for, in fact, it has not been called together since the reign of King Charles I. Next to the council of peers is the *Privy-Council*, which is composed generally of the Officers of State, the Ministers of the Crown, and such other persons as the King considers it advisable to appoint. The functions of this council are purely judiciary; and the most important part of its duties now consists in hearing and determining appeals from the sentences of the governors and judges of the British colonies and foreign possessions, for which purpose a judicial committee has been constituted by act of Parliament. The Cabinet-Council forms the actual executive Government; the members of which are all privy-councillors, and also members of one or other of the houses of Parliament. The members of the Cabinet are usually the First Lord of the Treasury, the Lord Chancellor, the Chancellor of the Exchequer, the Lord President of the Privy-council, the Lord Privy Seal, the three Secretaries of State, the First Lord of the Admiralty, the President of the Board of Control for Indian affairs, the President of the Board of Trade, the Chancellor of the Duchy of Lancaster, the Secretary of War, and the Master of the Mint, with occasional variations among the latter of these functionaries.

The fourth great Council is the Imperial Parliament of the United Kingdom, which is divided into two chambers: the House of Lords, and the House of Commons. The *House of Lords* is composed of the Lords Spiritual and the Lords Temporal. The spiritual lords are the Archbishops and Bishops of the Church of England; and one Archbishop and three Bishops of the Church of Ireland, who represent by rotation the Irish hierarchy. The temporal lords are the Hereditary Peers of England, of Great

* The income for other charitable purposes, is £491,536.

Britain, and of the United Kingdom of Great Britain and Ireland, with 16 Representatives of the Peers of Scotland, and 27 Peers of Ireland. The Scotch Peers are elected for each parliament; the Irish Peers are elected for life. The established form in which the House is addressed is — "The Lords Spiritual and Temporal in Parliament assembled." The Lord Chancellor of England is by office President of the House; in his absence, or during the abeyance of his office, a temporary Speaker or President is appointed by the Crown. Besides their legislatorial functions, the House of Lords also form a Court of Appeal in the last resort, from the supreme courts of law in the three kingdoms; but in practice, this power is exercised only by the Lord Chancellor, assisted by a judicial committee of their Lordships, who undertake the duty by turns.

The *House of Commons* is composed of 658 members; of whom England and Wales furnish 500, Scotland 53, and Ireland 105. They are elected periodically by such of the people of the United Kingdom as possess certain pecuniary qualifications. The President of the House, who is styled the Speaker, is elected by the members from their own number, and approved by the King. The House of Commons regulate the supplies for the public expenditure of the kingdom; money bills can originate only there, and cannot be altered by the House of Lords. Bills upon any other subject may originate and be altered in either House, but the concurrence of both Houses is necessary; and even when this is obtained, both must concur in every act, and the King has theoretically a veto upon their acts, which become laws only by the concurrence of all the three branches of the legislature. The duration of a parliament, as established by law, is seven years; but the King has the power of dissolving it at any time, and this is usually done a year or two before its term expires.

The *judicial establishments of England* are exceedingly complicated, in consequence of the courts having originated in barbarous times, or having been instituted in special exigencies for particular purposes; and never having undergone any systematic arrangement or distribution of powers. There are three distinct codes (if they may be so called) by which the forms and decisions of the supreme courts are regulated: viz. the Common Law of England, which is administered by the Courts of King's Bench, Common Pleas, and Exchequer; the Civil, Canon, and Ecclesiastical laws, which are administered by the Ecclesiastical and Admiralty Judges; and Equity, which forms the basis of the proceedings in the Court of Chancery. The judges of the King's Bench, Common Pleas, and Exchequer, are the judicial assessors of the House of Lords; and make periodical circuits through the counties of England and Wales, where, at the assizes, they administer both civil and criminal justice. The Magistrates of cities and burghs are likewise invested with certain limited judicial powers. By the late Municipal Reform Act, a uniform system of government has been established for all the Parliamentary burghs, except London. The municipal council consists of a mayor, aldermen, and common council, who are elected by the inhabitants. In every county, and in the principal burghs, there are a number of Justices of the Peace, who not only act as magistrates in preserving the peace, and in matters of police, but also exercise certain judicial powers at their quarter-sessions. The most important cases, however, are generally left by them to be tried by the Supreme Judges in circuit. In every county there is likewise a Sheriff, chosen annually by the king, who is at once the judge of the county-courts (now fallen into disuse), the keeper of the king's peace, the ministerial officer of the supreme courts, and the king's bailiff. The Coroner is a functionary chosen by the freeholders of the county; his principal duty is to inquire into the cause of sudden deaths; and in some cases he acts as the sheriff's substitute. There are usually four coroners for each county, and they hold their office for life. The lowest officers of justice are constables and bailiffs. The former are of two kinds: the constables of the hundreds, and the petty constables, who are subordinate to the former. Their functions consist in keeping the public peace in their respective districts, for which purpose they are invested with the power of arresting and imprisoning accused persons, opening the doors of houses, &c. The bailiffs are the sheriff's officers, and perform all the minor and least agreeable duties of his office.

In every county there is likewise a Lord-Lieutenant, who is the commander of the militia, or military levy of the county, and appoints its officers when embodied. He is appointed by the king, and is usually allowed to retain his office for life. The same person, also, generally holds the office of *Custos Rotulorum*, or keeper of the records, and first justice of peace of his own county.

Finances. — In early times, the Kings of England, like those of most other feudal states, were the most extensive landholders in the kingdom; their revenues

consisted chiefly of the rents, services, &c., derived from their own lands, and partly of the fines, compositions, and other payments, derived from the lands of their vassals. But in the course of time the estates of the Crown were mostly alienated; and the diminution of revenue thence arising being coincident with increased demands for public service and the greater expense of government and defence, it became necessary to raise a revenue from other sources. At present, the *public revenue* of the kingdom is derived from various sources, which are classed under six principal heads or branches, viz.—1. *Customs*, or duties charged upon most articles of commerce imported or exported; 2. *Excise-duties*, charged on certain commodities produced, or manufactured in the country, and on certain branches of trade; 3. *Stamp-duties*, which are charged upon the parchment or paper on which certain deeds, contracts, receipts for money, bills of exchange, and many other documents, are written or printed; on newspapers, fire-insurances, legacies, probates of wills, &c.; 4. *Land-tax*, assessed on the valued rent of land, and made perpetual in 1798; 5. *Assessed-taxes*, levied upon window lights, servants, horses, dogs, carriages, and numerous other articles; 6. *Post-office duties* upon the conveyance of letters; 7. *Property* and *Income-tax*—For the year ending 5th January 1848, the total revenue of Great Britain amounted to L.56,273,730, whereof the customs produced L.21,655,662; the excise, L.13,919,652; stamps, L.7,671,324; land and assessed taxes, L.4,553,860; the post-office, L.2,181,017; property and income-tax, L.5,612,655; crown-lands, L.430,763; miscellaneous revenues, L.119,879, and incidental revenue (repayment of advances, &c.) L.205,463. These taxes are almost entirely collected by government officers paid by salaries, each of the branches of customs, excise, stamps, land, and assessed taxes, and post-office, being managed by a separate establishment.

The *public expenditure* consists of a vast variety of items; but more than one-half of its present amount is absorbed by the interest and expense of management of the *national debt*, which amounted, at 5th January 1846, to L.768,789,250, forming an annual charge of L.28,141,531. This debt amounted, at the Revolution, in 1689, to L.664,263; at the accession of Queen Anne, in 1702, to L.16,394,702; at the accession of George I., in 1714, to L.54,145,363; at the accession of George II., in 1727, to L.52,092,238; at the peace of Paris in the third year of the reign of George III., in 1763, to L.138,865,430; at the commencement of the American war, in 1775, to L.128,583,635; at the conclusion of the American war, in 1784, to L.249,851,628; at the commencement of the French war, in 1793, to L.239,350,148; and at the date of the consolidation of the English and Irish Exchequers, in 1817, being the second year of the general peace, to L.840,850,491. The enormous public expenditure, immediately previous to the termination of the last war, serves in part to explain this amazing growth of the debt. In 1814, the current expenditure, including the interest of the debt, amounted to L.106,832,260, which was the largest annual outlay ever made by the British government; that of the previous year was within a million of the same amount. Indeed, the sum expended in the defence of the country since the commencement of the present century is almost incredible in amount; but it affords a signal proof of the immense resources of the nation. The total cost of the army, navy, and ordnance, from 1801 to 1836, was above 1000 millions, or exactly stated, L.1,009,938,076; of which L.348,557,438 was expended in the five years from 1809 to 1814. The amount paid to foreign states in the shape of subsidies and loans (the latter being for the most part synonymous with the former), from 1793 to 1814, was L.46,289,459; of which L.30,582,259 was expended during the last ten years of the war.

The expenditure for the year ending 5th January 1848, was L.59,230,413, and it is thus apportioned:—Interest of debt, L.28,141,531; charges upon the consolidated fund, L.2,319,531; army, L.7,540,405; navy, L.8,013,873; ordnance, L.2,947,869; miscellaneous charges upon the annual grants of Parliament, L.3,621,756; distress in Ireland, L.1,525,000; civil list—privy purse, salaries, and tradesmen's bills—L.393,983. The charges upon the consolidated fund and the annual grants of Parliament, include the expenses of the civil government, the administration of justice, and the collection of the revenue. In the same year, the first of these amounted to L.2,008,555, the second to L.1,046,594, and the last to L.4,727,465. The number of persons employed in the various departments of the government (exclusive of the army and navy) was 27,365 in 1815, and 23,578 in 1835; the aggregate amount of their salaries, for each of these years respectively, was L.3,763,100, and L.2,786,278.

ARMY and NAVY.—The Army of Great Britain, in March 1848, consisted of 27 regiments of cavalry; 3 regiments of foot-guards, divided into 7 battalions; 101 battalions numbered as 99 regiments of the line; 1 rifle brigade of 2 battalions;

1 regiment of artillery, divided into 9 battalions; 1 corps of engineers; and 1 corps of sappers and miners; amounting altogether to about 109,000 men. This number was exclusive of the Indian army, and several other colonial regiments and corps; the grand total exceeding 300,000 men. Of the British army, properly so called, from 20,000 to 25,000 men have generally been stationed in Ireland, but at present (July 1848) the number has been very greatly increased in consequence of the late attempt at rebellion; above 20,000 serve in India; from 10,000 to 12,000, besides artillery and engineers, in Great Britain; and the remainder are dispersed in America, the West Indies and the British colonies and foreign possessions in different parts of the world.* The British army is recruited entirely by voluntary enlistment, and no difficulty is experienced in finding young men to supply the vacancies made in its ranks, by the ever-varying exigencies of the service. The present constitution of the army dates so far back as the restoration of King Charles II. The first regiment of the line, which till very recently bore the title of "Royal Scots," consisted originally of a body of Scotsmen brought by him from France in 1661. The number of regiments and the complement of men has varied considerably at different periods.† During the latter years of the war which terminated in 1815, the land force embodied, including militia, yeomanry, and volunteers, amounted to not less than 450,000 men. As the militia has not been called out for some years past, the yeomanry cavalry remains the only domestic military force in Britain. After a reduction in 1838, of nearly one-fourth, the yeomanry consisted of 13,594 privates, embodied into 251 troops, and 46 corps. That portion of the force proper to Scotland, consists of about 10 troops, mustering in all about 700 privates. The annual expense of the yeomanry defrayed by government, is about £80,000.

The *Royal Navy* of Great Britain consists of about 556 ships of all classes;‡ but deducting such as are used as convict ships, floating chapels, coal depôts, &c., the efficient navy consists of—19 first-rates, of from 120 to 100 guns each, mounting 2216 guns; 76 second and third-rates, of from 104 to 70 guns each, mounting 6196 guns; 126 fourth, fifth, and sixth-rates, of from 65 to 18 guns each, mounting 1873 guns; 79 sloops, of from 18 to 8 guns each, mounting 986 guns; 16 brigs, of from 8 to 3 guns each, mounting 78 guns. Steamers—22 ships and frigates, with an aggregate power of 12,222 horses, and mounting 281 guns; 42 sloops, of an aggregate power of 13,300 horses, and mounting 251 guns; 38 gun-vessels, of an aggregate power of 6748 horses, and mounting 125 guns; 2 screw-schooners, whose joint power is 120 horses, and mounting 20 guns; steam-guardships, classed as fourth-rates, 3800 horse-power. Grand total, 420 vessels, mounting 15,026 guns. Of this force 104 are steam-vessels, propelled by engines of an aggregate power of 36,180 horses. The number of hands voted for the current year (1847–48), is 41,500, of which number, 27,500 seamen, 2000 boys, and 4000 marines, are to be employed afloat, and 8000 ashore. The principal harbours, dockyards, and arsenals, for the royal navy, are Portsmouth and Plymouth, or rather Devonport, on the coast of the Channel; Sheerness, Woolwich, and Deptford, on the Thames; Chatham on the Medway; and Milford Haven, in Pembrokeshire, South Wales.

The comparative *rank of the higher class of officers in both services* is as follows:—an admiral ranks with a general in the army, a vice-admiral with a lieutenant-general, and a rear-admiral with a major-general. A naval captain of three years standing ranks with a colonel in the army, and a captain of less than three years standing with a lieutenant-colonel; a commander ranks with a major, and a lieutenant with a captain.

* The distribution of the British army in the colonies (exclusive of India), in 1837, was as follows:—New South Wales, 3,980 men; Ceylon, 2,224; Mauritius, 1,668; Cape of Good Hope, 1,668; St Helena, 556; West Indies, 7,784; North America, 8,896; Mediterranean, 7,228.

† The ordinary cavalry regiments have each, on an average, 27 officers, 31 non-commissioned officers, 304 privates, and 283 horses. The officers consist of—1 colonel, 1 lieutenant-colonel, 1 major, 6 captains, 6 lieutenants, 6 cornets, 1 paymaster, 1 adjutant, 1 quartermaster, 1 surgeon, 1 assistant-surgeon, and 1 veterinary surgeon. The complement of a regiment of the line, is considered to be—1 colonel, 1 lieutenant-colonel, 2 majors, 10 captains, 12 lieutenants, 8 ensigns, 1 adjutant, 1 paymaster, 1 quartermaster, 1 surgeon, 1 assistant-surgeon, 36 sergeants, 14 drummers, 36 corporals, and 740 privates. Foot-Regiments in India have, in addition, 1 lieutenant-colonel, 10 lieutenants, 1 assistant-surgeon, and 10 sergeants. The three regiments of horse-guards, consist each of 32 commissioned officers, 53 non-commissioned officers, 351 privates, and 274 horses. The three battalions of the grenadier foot-guards, include in all, 96 officers, 177 non-commissioned officers, and 2,000 privates. The other two regiments of foot-guards, consisting each of two battalions, have each 61 officers, 109 non-commissioned officers, and 1,280 privates.

‡ The official classification of ships in the Royal Navy, is as follows:—

1. Rated Ships, viz.—
   First Rate.—All three-decked ships.
   Second Rate.—One of the royal yachts, and all two-decked ships, whose war complements consist of 700 men and upwards.
   Third Rate.—The other royal yachts, and all such yachts as may bear the flag or pendant of an admiral or captain, superintending one of the royal dock-yards, and all ships whose complements are under 700, and not less than 600 men.
1. Rated Ships—(*continued.*)
   Fourth Rate.—Ships whose complements are under 600, and not less than 400.
   Fifth Rate.—Ships whose complements are under 400, and not less than 250.
   Sixth Rate.—Ships under 250.
2. Sloops and Bomb-vessels; all such as are commanded by commanders.
3. All other smaller vessels, such as are commanded by lieutenants, or interior officers.

Ships of the 1st rate carry 100 guns and upwards; those of the 2d rate, 80 and upwards; the 3d rate from 70 to 80; the 4th rate from 50 to 70; the 5th rate from 36 to 50; and the 6th rate from 24 to 36.

PRODUCTIVE INDUSTRY. — This important subject we shall notice as fully as our limited space will permit, under the several heads of — 1. Agriculture; 2. Fisheries; 3. Mines; 4. Manufactures; 5. Commerce.

§ 1. *Agriculture.*

The improved state of agriculture in England is remarkably shown, both in the advance of rents, which in many places are at present from three to fivefold their amount in 1793, and in the increased production necessary to meet the wants of a rapidly augmenting manufacturing and trading population, while the number of the producers, or the rural population, is remaining in a comparative degree almost stationary.* Under a preceding head (see table, *anté*, p. 188) we have stated, on the authority of Mr. Couling, the extent of arable and pasture land throughout England and Wales, and also noticed generally the districts best adapted for raising the various cereal and green crops. In another place (*anté*, p. 190) we have briefly pointed out the localities famed for peculiar and valuable breeds of domestic animals. The counties in which tillage or arable husbandry is pursued to the greatest extent, are (according to an enumeration by Mr. M'Culloch), Kent, Essex, Suffolk, Norfolk, Hampshire, Berkshire, Bedfordshire, Surrey, Sussex, Hertfordshire, part of Yorkshire, part of Lincolnshire, Durham, and Northumberland. The principal dairy counties are Cheshire, Salop, Gloucester, Wilts, Buckingham, Essex, Suffolk, York, Derby, Cambridge, Dorset, and Devon. The counties and districts most distinguished for breeding and fattening cattle and sheep, are Lincoln, Somerset, Leicester, Northampton, and, as we have already stated, Teeswater or Teesdale in Durham, and Cleveland and Holderness in Yorkshire. In the Welsh counties, from the broken nature of the surface of the country, the division of agricultural production is not so easily defined. Sheep and cattle are pastured upon the hills, and tillage and dairy husbandry carried on in the valleys.

From the attention given of late years to the statistics of agriculture, a vast fund of valuable information has been accumulated, of which, however, our limits preclude us from making any considerable use. We therefore proceed briefly to notice a few of the most remarkable facts and calculations which have been brought into notice. For more ample details regarding this, and indeed every other subject connected with the productive industry of the kingdom, we refer our readers to Mr. M'Culloch's "Statistical Account of the British Empire," and Mr. Porter's work on the "Progress of the Nation."

The *extent of surface under cultivation* in England and Wales is generally conceived to be about from 12,591,000 to 13,252,000 acres. According to Mr Comber, the *distribution of the crops* (1812) was as follows:—

	Acres.		*Acres.*
Wheat,	3,160,000	Hop-grounds,	36,000
Barley and rye,	861,000	Nursery-gardens,	9,000
Oats and beans,	2,872,000	Fruit and kitchen-gardens, cultivated by spade,	41,000
Clover, rye-grass, &c.	1,149,000	Pleasure-grounds,	16,000
Roots and cabbages, cultivated by plough,	1,150,000		
Fallow,	2,297,000	Total,	11,591,000 †

On the supposition that at present there are 13,252,000 acres under cultivation, Mr M'Culloch makes the following estimate of their distribution:—

	Acres.		*Acres.*
Wheat,	3,800,000	Clover,	1,300,000
Barley,	1,500,000	Fallow,	1,500,000
Oats and rye,	2,500,000	Hop-grounds,	52,000
Beans and peas,	500,000	Gardens,	100,000
Potatoes, turnips, and rape,	2,000,000	Total,	13,252,000

The *value of the crops*, as above, he estimates at L.83,656,071, ‡ adding to which L.59,750,000 || as the probable value of the produce of 16,500,000 acres of pasture

* The number of families in England and Wales, employed in agriculture was, in 1811, 770,199: in 1821, 847,957; and in 1831, 834,543, showing an increase of 8.3-10ths per cent. in the course of twenty years. The increase in the number of families, in the entire population, was, for the same period, 35.9-10ths. In 1811, persons chiefly employed in agriculture amounted to 1,261,448.

† 18,110 square miles.

‡ This estimate is based on the average productiveness of the various crops throughout England and Wales, which is found to be, in regard to wheat, 4 quarters per acre; to barley, 4¾ quarters; to oats and rye 5; to beans and peas, 3½; and to potatoes, turnips, and rape, £7 per acre. Mr M'Culloch values the annual produce of hop-grounds, gardens, &c. at £15 per acre.

|| The items of which this sum consists, are—

Cattle, 1,100,000, at £12 each,	£13,200,000	Horses, 200,000 (full grown), at £15 each,	£3,000,000
Calves, 200,000, at £3 each,	600,000	Poultry, eggs, rabbits, deer, &c	1,344,000
Sheep and lambs, 6,809,000, at £1 : 10s. each,	10,200,000	Meadow and grass for work and pleasure horses,	13,000,000
Wool, 338,000 packs, at £12 each,	4,056,000	Dairy produce (milk, butter, and cheese),	12,000,000
Hogs and pigs, 555,000, at £1 : 16s.,	1,000,000	Wood,	1,350,000

land, the total annual value of the agricultural produce of England and Wales will be L.138,021,550.

Estimates of the number and value of the domestic animals in England and Wales rest in general on very vague data. In the whole of Great Britain there are probably 1,500,000 horses, the value of which will be from £18,000,000 to £22,000,000; cattle, 5,000,000, of which about a fifth are slaughtered annually; and sheep and lambs, 39,500,000, of which about 26,000,000 are in England and Wales.

The landed rental of England and Wales, calculated at the rate of 17s. 3½d. an acre for the former, and 6s. 10d. an acre for the latter, will be nearly £30,000,000 yearly. The total number of proprietors is estimated at 200,000.

§ 2. *Fisheries.*

The fisheries of England and the united kingdom, generally form an important, though not a predominant element of the national resources. Their annual value is estimated by Sir John Barrow at £8,300,000, and by Mr. M'Culloch at £3,000,000, or £3,500,000, either of which sums he considers as beyond the mark.

Of the *British home fisheries* the most important are the *Herring Fishery* and the *Cod and Ling Fishery*. These are chiefly prosecuted on the east coast of Scotland, and in the neighbourhood of the Orkney and Shetland Islands. Large quantities, however, of herrings, cod, haddocks, &c., are caught on various parts of the English coast. At Yarmouth and Lowestoffe the herring fishery is of considerable moment, especially at the former place, in which the capital embarked in it is estimated at £250,000, and the aggregate tonnage of the fishing-vessels belonging to the port at from 4000 to 5000 tons. It is carried on to a less extent at Hastings, Folkstone, Cardigan, and Swansea. The coast in the neighbourhood of Whitby, Hartlepool, and Robin Hood Bay, is the chief seat of the fishery for cod and other white fish. Notwithstanding the withdrawal in 1830 of the bounties, by which government for a course of years endeavoured to foster the herring fishery,* it does not appear to have declined. In 1836 the quantity cured was 497,615 barrels, which exceeded by 55,420 barrels the largest take (442,195 barrels, in 1821) on which the bounty was ever paid; and in 1847, the take was 607,451 barrels. The cod, ling, or hake, cured dried was, in 1847, 103,171 cwts., those cured in pickle, 7,833½ barrels. In 1834, exclusive of 303 vessels of the burden of 10,385 tons which entered British ports with 56,615 barrels of herrings cured at sea, the herring and cod and ling fishery of that year employed 11,284 boats decked or undecked, and gave employment to 82,266 persons. The number of persons employed in the same fisheries in 1846 was 9[illegible],033. We have already given some statements illustrative of the *Oyster Fishery* (see *anté*, p. 190), and now add, that the principal towns engaged in the fishery, or rather the trade of oyster fattening for London consumpt, are Colchester in Essex, and Faversham, Milton, Queenborough, and Rochester in Kent. A considerable fishery in oysters is carried on at Wells in Norfolk, and another, to which we have already alluded, at Poole in Dorsetshire. The latter, some years ago, supplied the London market two months every season, and the receipts for that time were supposed to average from £8000 to £10,000. The Jersey oyster fishery, which is principally for the supply of the London market, employs about 1500 men, 1000 women and children, and 250 boats. The *Salmon Fishery*, which till lately was of very great value, is now in a declining state, not only as respects the Tweed, which is its principal seat in England, but also the other rivers thoughout the kingdom. The exports from Berwick, which formerly were from 9,000 to 10,000 boxes a-year, have fallen to about from 3000 to 4000 boxes; and the annual rental paid to the proprietors of the river, which twenty-three years ago exceeded £30,000, is now reduced to about £5,000. This decline is ascribed to overfishing and a too limited close-season, by which the number of fish has been lessened. The *Pilchard Fishery* is carried on exclusively on the coasts of Devonshire and Cornwall. During the season, which extends over a great part of the year, it engages about 1,000 boats, and gives employment to 3,500 men at sea, and 5000 men and women ashore. Of the annual produce, about 3000 hogsheads are retained for home consumption, and 30,000 hogsheads exported to the Mediterranean. The capital employed in boats, nets, &c. is supposed to be from £200,000 to £250,000. The less considerable fisheries, though important in the aggregate, are those of *mackerel*, which is taken chiefly on the coasts of Norfolk and

* At the maximum period of these duties, exclusive of a bounty on the tonnage of the vessels fitted out for this fishery, varying according to circumstances from 20s. to 50s. a ton, a bounty of 4s. a barrel was given on all herrings cured gutted.

Hampshire and the intervening counties; of *turbot*, which, though scarce, is found on some of the coasts; and of *lobsters*, which are caught chiefly on the coast of Yorkshire. The greater portion of the lobsters required for the London market is procured from Shetland and Norway; and the same market derives its principal supply of turbot from Holland. It is said that great quantities of the smaller kinds of shell-fish are consumed by the lower orders in London, under the name of *periwinkles*; these are gathered on various parts of the coast, even at as great a distance as the Firth of Forth. A fishery for *sprats* to be used as manure, usually termed the *Stow-boat Fishery*, is carried on extensively on the coasts of Norfolk, Essex, and Kent.

Of the *distant British fisheries* we shall briefly mention the Cod Fishery of Newfoundland, the Northern Whale Fishery, and the Southern Whale Fishery, all of which, especially the two first, are considered to be in a state far from thriving. In respect to the *Newfoundland Cod Fishery*, the fishings on the great and other banks have been abandoned to the French and the Americans, and the only fishery carried on by the British is the boat or coast fishery. In 1814 the value of the British fishery in that quarter exceeded £2,800,000,—in 1834, the value of the fish exported was only £443,577. A valuable British fishery, the produce of which is estimated at about £300,000, exists on the Labrador coast, and there is another of a profitable description carried on along the eastern coasts of the British provinces to the south of that country. *The Northern Whale Fishery*, or as it was formerly called, the *Greenland Whale Fishery*, has of late years very much declined, in consequence of the decreased number of whales met with, and their retreat from their old haunts on the coast of Greenland to less accessible seas, where their capture is attended with greater risk than formerly. The average number of vessels lost during each of the twenty years ended 1834 was 5, and in one of these years (1830) the loss amounted to 19. In 1834, the number of vessels sent to Greenland and Davis' Straits was 76, having an average tonnage of 328 tons. The returns that year were 8,214 tons of oil, and 442 of bone. The annual produce of the fishery appears, at an average of the last few years, to be only about £300,000, which may be considered a very inadequate return, considering the great amount of capital embarked in it, and the risk attending its operations. As in the case of the herring fishery, the whale fishery was at one time largely supported with government funds, the bounties expended upon it having in all amounted to about two millions and a half. These bounties ceased in 1824. The principal ports in England engaged in this fishery are Hull, Newcastle, London, Whitby, and Berwick. The *Southern Whale Fishery*, the principal object of which is the capture of the spermaceti whale, is carried on almost exclusively by vessels from the port of London. In 1834, 126 ships, having an average tonnage of 390 tons, were engaged in it. The return that year was 6,731 tons of sperm, and 2,543 tons of common oil. This fishery has for many years been keenly and skilfully prosecuted by the Americans, and latterly by the British Australian colonists. The supply of fish appears to be decreasing.

§ 3. *Mines.*

Having already described, as fully as our limits would allow, the geographical distribution of the mineral productions of England (see *anté*, pp. 186, 187), we shall now add some brief notices regarding the extent to which these are made available. The benefit which Britain derives from its mineral treasures is immense, not so much as regards their direct marketable value (though that is considerable), but as the means by which the manufacturing power of the country is so prodigiously developed.

The following estimate of the mineral productions of Great Britain, on an average of years and prices, has been framed by Mr. English, editor of the Mining Journal:—

	Quantity.	*Value.*
Coal,	25,000,000 tons	£10,000,000
Iron,	900,000 ,,	7,000,000
Copper,	13,000 ,,	1,300,000
Lead,	46,000 ,,	950,000
Tin,	5,000 ,,	550,000
Silver (extracted from lead)	10,000 lbs. Troy	30,000
Salt, alum, and other minor produce, more than		1,000,000
Total yearly value probably exceeds		£20,830,000

Though the valuable information contained in the above table is quite sufficient for ordinary reference, we think it proper to furnish our readers with some details regarding the important products coal and iron.

COAL.—The quantity of coal annually consumed in Great Britain is estimated by Mr. M'Culloch as follows:—domestic consumption, and in the smaller manufactures, 17,000,000 tons; in the production of iron (but not including the manufacture of hardware and cutlery), 4,000,000; in the cotton manufacture, 800,000; in the woollen, linen, and silk manufacture, 600,000; in copper-smelting, brass manufactures, &c. 925,000; in salt-works, 350,000, and in lime-works, 500,000,—in all 24,175,000 tons. Adding to this quantity 900,000 tons for exports to Ireland, and 1,113,000 to the colonies and to foreign parts, the total will represent an annual production of 26,188,000 tons, the value of which, in all, at 8s. a ton, is £10,400,000 a-year. Of the prodigious quantity just now stated, by far the greater part is produced in England. About a sixth of the whole supply is derived from the Durham and Northumberland field alone. The Tyne and Wear collieries give employment to 21,000 miners and others engaged in raising the coal, and to 15,000 seamen. In all there may be 135,000 persons engaged in the British coal trade. The supply of coal may be deemed inexhaustible. According to an estimate by Mr. Taylor (which, however, is considered by Dr. Buckland to be very much exaggerated), the Durham and Northumberland field will afford the present supply for above 1,700 years; and Mr. Bakewell is of opinion that the Welsh coal-field will supply England with fuel for 2,000 years after all the English coal-mines are worked out.

IRON.—We have already stated the proportions in which iron has hitherto been produced in the various iron-making districts (see *antè*, p. 187.) The quantity made in all the United Kingdom in 1830, was 678,417 tons, of which 635,590 tons were the produce of furnaces in England and Wales. Since that period, the quantity of iron used in the construction of railways has been very great, and as these undertakings continue on the increase, it is probable that the quantity at present made in Britain is not less than 1,750,000 tons, and that, in the course of a year or two, a much larger quantity will be made. On the supposition that the annual production is 1,750,000 tons, Mr M'Culloch estimates the value at 10,500,000 yearly; the number of persons employed, or dependent on the business, at 150,000; and the capital embarked, at £20,000,000. The number of furnaces, all mostly heated by the hot-blast, amounted, in 1846, to 97, yielding a yearly produce of 529,509 tons. There were also 8 bar-iron works, producing weekly 2000 tons. The consumption of coal necessary for all the furnaces in Great Britain is also calculated by the same able statist at nearly 9,125,000 tons annually.

§ 4. *Manufactures.*

INDUSTRY.—Nearly every species of art and manufacture has been carried to a high degree of perfection in England. The English may indeed be regarded as the most enterprising and industrious nation in the world. Almost every town or district is distinguished for some branch of industry; but our limited space will allow us to notice only the most considerable of such as may properly be called manufacturing places, inasmuch as the quantity of the articles which they produce exceeds the wants of their own inhabitants.

Iron and Iron-founding:—Merthyr-Tydvil in Glamorganshire, and several adjacent places (principally Llanelly, Penydaren and Vainor) in Brecknockshire; Trevethin, Pont-y-pool, Upper Llanover and Aberystwith in Monmouthshire; Wednesbury, Bilston, West Bromwich, and neighbouring places in Staffordshire; Hales Owen, Madely, Dawley, Ketley (near Wellington), and Shrewsbury in Salop; Dudley, Stourbridge, and Old Swinford in Worcestershire; Bedlington and Bishop-Auckland in Durham; Sugley (near Newcastle) and Long-Benton in Northumberland; Rotherham in the West Riding of Yorkshire; Whitchurch and Michaelstone-upon-Afon (near Neath) in Glamorganshire.—*Preparation of Tin and Copper*:—Swansea in Glamorganshire; Panteague, Llanvreehva, and Roggerston in Monmouthshire; Margam in Glamorganshire.—*Engines and Machinery*:—Soho (a suburb of Birmingham, but in Staffordshire;) Bertley and Sunderland in Durham; Newcastle and Chirton in Northumberland; Greenwich in Kent: Dyffryn-Clydach in Glamorganshire; Llanidloes in Montgomeryshire; Manchester and Salford, Lancashire.—*Hardware, Cutlery, and Tools*:—Sheffield, and neighbouring parishes, in the West Riding of Yorkshire; Birmingham and Aston, Warwickshire; Tipton, Bilston, Wolverhampton, and Walsall, in Staffordshire; Chorlton-Row (near Manchester), Warrington, and Preseot in Lancashire; Willenhall, Wednesbury, Darlaston, Sedgeley, Rowley-Regis, Smithwick, Handsworth, and Brewood, in Staffordshire; Ashton in Lancashire; Wolverley, Cradley, Bellbroughton, Bewdley, King's-Norton, and Yardley, in Worcestershire; Mells, Somersetshire.—*Plated Goods*:—Sheffield, Birmingham, and London.—*Jewellery and Plate*:—London, Birmingham, Derby, Liverpool, and Chester.—*Watches and other Timepieces*:—Clerkenwell (London), Coventry, Liverpool, and Chester.—*Nails*:—In most of the towns and villages in Staffordshire and Worcestershire, particularly at Bromesgrove, Dudley, Old Swinford, Cradley, and Nathfield, in the latter county; also at Darton, in Yorkshire, West Riding.—*Needles*:—Redditch (parish of Tardebigg), and Feckenham, in Worcestershire; Whitechapel (London); Ipsley, Studley, Alcester, and Sambourn, in Warwickshire, and Hathersage in Derbyshire.—*Pins*:—Birmingham; Gloucester, and Bristol, in Gloucestershire; Warrington in Lancashire, and some other places.—*Cotton Fabrics*:—Manchester, Blackburn and its vicinity, Great and Little Bolton, Oldham and Crampton, Salford, Preston, Wigan, Bury, Chorlton-Row, Spotland and Castleton (in Rochdale parish) and the parish of Leigh, in Lancashire; Saddleworth in the West Riding of Yorkshire, and the wapentakes of Staineliffe and Ewecross in the same Riding; Macclesfield in Cheshire; Kendal in Westmoreland; also to a small extent at Burton-upon-Trent, Yoxhall and Tutbury in Staffordshire; and at Holywell and Mold in Flintshire.—*Woollen Cloth*:—Halifax (parish), Leeds, Bradford, Huddersfield, Almondbury (parish), Kirk-Burton, Calverley, Dewsbury (parish), Birstal, Batley, Saddleworth, and Kirkheaton, in the West Riding of Yorkshire; Trowbridge in Wilts; Frome in Somersetshire; Bradford in Wiltshire; Wooton-under-Edge, Stroud, Minchinhampton, Bisley, Uley, Norsley, Cam, Painswick, and other places in Gloucestershire; Lyneeombe, Wideome, Tiverton (near Bath), and Wellington in Somersetshire; Westbury (parish), Melksham, Kingswood, North Bradley, Southwick, Hilperton, Chippenham, Bromham, Longbridge, Heytesbury, and Calne in Wiltshire.—*Stuffs, and other Woollen Manufactures*:—Stuffs (bombazines, &c.) principally at Norwich in Norfolk, and Huddersfield in the West Riding of Yorkshire; at Wymondam in Norfolk; Durham and Bernard-Castle in the county of Durham; and some of the clothing towns already enumerated:—various woollen manufactures, though to no great extent, at Barnsley in Yorkshire, West Riding; Kendal, Kirkland Melthorpe, Stainton, Nether-Grave-Ship, and Hilton in Westmoreland; Axminster, Ashburton, Buckfastleigh, Chagford, Collumpton, Crediton, North and South Molton, and North Tawton, in Devonshire; Newtown, Llanllewhaiarn, Llanbrynmair and Pool (Welshpool), in Montgomeryshire; Dolgelly in Merionethshire; and in several of the Welsh counties, particularly Carmarthen, Cardigan, Denbigh, Glamorgan, and Pembroke.—*Carpets*:—Kidderminster in Worcestershire; and to a small extent at Bridgenorth in Salop; Wilton in Wiltshire; Spratton in Northamptonshire; Dewsbury in York, West Riding; Startforth in York, North Riding; Durham

and Bernard-Castle in Durham county; and in various places in Lancashire. —— *Flannels:*—Rochdale in Lancashire; Newtown in Montgomeryshire; Oswestry, Church-Stretton, and Worthen in Salop.—— *Blankets:*—Witney, together with Harley and Crawley (adjacent hamlets) in Oxfordshire; Wakefield and Heckmond-Wike (near Wakefield) in the West Riding of Yorkshire. —— *Hosiery:*—Leicester, Nottingham, and Derby; also Loughborough, Hinckley, and Sheepshead in Leicestershire; Tewkesbury in Glouecestershire, and to a small extent at Godalming in Surrey. —— *Lace:*—Nottingham, Radford, Mansfield, Sutton-in-Ashfield, and Basford in Nottinghamshire; at Derby; at Leicester and Melton-Mowbray in Leicestershire; Snenton, Hucknall-Torkard, Beeston, Linton, Charlton, Bulwell, Greasley, Calverton, Kirby-in-Ashfield, Mansfield-Woodhouse, Stapleford, Southwell, Lambley, Ruddington, and Selston, in Nottinghamshire; Middleton-Cheney in Northamptonshire; and to a small extent at Barnstaple, Pilton, and Tiverton, in Devonshire, and Tewkesbury in Gloucestershire. ——*Linen:*—Barnsley (and other places in the wapentake of Staincross), Leeds, Staincliffe and Eweross (wapentakes), Knaresborough (and other places in the wapentake of Claro), and Ripon in the West Riding of Yorkshire; York City; Stockton-upon-Tees, Hurworth, and Aycliffe in Durham; Kendal, Holme, Kirkby-Lonsdale, and Kirkby-Thore, in Westmoreland; Newark and Hawton in Nottinghamshire; Hutton, Appleton-upon-Wiske, Osmotherley, Northallerton, Barrowby, Sowerby, Burton-upon-Yare, and Broughton, in the North Riding of Yorkshire; Keynsham in Somersetshire: — and in *Sacking, Sailcloth, &c.* — Crewkerne in Somersetshire; Bridport in Dorsetshire; Maidstone in Kent; Liverpool, Warrington, and Treckleton (in Garstang parish), Lancashire; Hull in the East Riding of Yorkshire; Whitby in the North Riding of the same, and several other of the principal sea-ports of the kingdom. —— *Silk:* — Spittalfields (London); Coventry in Warwickshire; Huddersfield in the West Riding of York; Macclesfield in Cheshire; Manchester and Salford in Lancashire; Derby; Nuneaton, Foleshill, Astley, Chilvers-Coton, and Sow, in Warwickshire; Braintree, Great and Little Coggleshall, and Bocking, in Essex; Chard, Taunton, and Shepton-Mallet in Somersetshire; Haslemere in Surrey; Glimsford and Lavenham in Suffolk; Holywell in Flintshire; Kettering in Northamptonshire; Great Yarmouth, in Norfolk. —— *China-ware and Earthenware:*—Burslem, Etruria (and other parts of the township of Shelton), Stoke-upon-Trent, Longton, Lane-End, Penkhull (township), Hanley, Fenton-Calvert, and Snead in Staffordshire; Colebrook-Dale* in Salop; Derby; Lambeth (London;) Madeley and Broseley in Salop; also Bristol, Newcastle, Chesterfield, &c. —— *Glass:*—Newcastle and Byker in Northumberland; Gateshead, South-Shields, and Bishop-Wearmouth, in Durham; Birmingham; Ravenhead (near St. Helen's) in Lancashire; Bristol; Dudley; Stourbridge; Leeds; Manchester; London; Nailsea in Somerset; Witchwood in Yorkshire, West Riding. &c.—— *Hats:*—Southwark (London); Frampton-Cotterell, Winterbourne, Bitton, and other places in Gloucestershire; several places in Derbyshire; Oldham in Lancashire; Atherstone in Warwickshire; Rudgeley in Staffordshire; also Bristol, Manchester, Liverpool, Birmingham, and Newcastle-under-Lyne. —— *Shoes:*—Northampton, Wellingbro', Irthlingborough, and Kettering in Northamptonshire; London; Stafford, &c.—— *Gloves (Leather):*—Worcester; Woodstock, and other places (Wootton, Charlbury, &c.) in Oxfordshire; Yeovil and Milborne-Port in Somersetshire; London; Ludlow in Salop, &c. ——*Paper:*—Maidstone in Kent; Wycombe, Norton-Chenies, &c. in Buckinghamshire; Chedder in Somersetshire; Holywell in Flintshire, &c. —— Of the remaining manufactures, we may mention, *sugar-refining*, which is carried on at Whitechapel in London: *porter-brewing* in the metropolitan borough of Southwark; *tanning* and *leather-dressing* at Bermondsey (Southwark), Newcastle, Bristol, &c.; *soap-making* at Liverpool, London, Bristol, Runcorn, Newcastle, Brentford, Dudley, Hull, &c.; preparation of *colours* (from lead), at Monyddmaen in Monmouthshire, and at Newcastle; *gunpowder-making* at Dartford in Kent, Waltham Abbey in Essex, Sedgewick and Longdales in Westmoreland, &c.; preparation of *alkali* at Newnham in Northumberland; *comb-making* at York, Sheffield, and Birmingham, also at Kenilworth in Warwickshire, and Greenwich in Kent; and the manufacture of *gun-flints* at Brandon in Suffolk.

The woollen manufacture is the oldest for which England is celebrated; its total yearly produce is estimated at about £22,500,000, and the number of persons employed at 334,000. The cotton manufacture is, however, the largest and most important, the total annual produce being estimated at from £31,000,000 to £34,000,000, and the number of people supported by it at 1,500,000. The capital which it employs is about £31,000,000. The rapidity of its growth, especially within the last twenty years, is unparalleled. While the quantity of cotton imported for use into the United Kingdom was only 17,999,882 lbs. in 1785; 31,447,605 lbs. in 1790; 56,010,732 lbs. in 1800; and 88,743,200 lbs. in 1816; by 1845 it had increased to 721,979,953 lbs.† The total value of the iron manufactures (hardware, cutlery, &c. included) of Great Britain, is estimated at £17,000,000 a-year. Linen has never formed one of the staple manufactures of England, and the manufacture of silk has never been a very prosperous branch of trade; but still these two manufactures give employment to a considerable number of people; the value of the annual produce of the former is estimated at £8,000,000, and that of the latter at £10,000,000. China and earthenware are manufactured in great perfection, and to a vast extent, principally, as we have already stated, in Staffordshire, where "the Potteries," as a group of towns and villages engaged in the manufacture is called, occupy a district of considerable extent in the north-west of the county, with a population of 60,000 souls. It is reckoned that earthen-ware, valued at £2,350,000, and glass at £2,000,000, are made yearly in Britain. The stocking manufacture is carried on to a great extent in the places we have already enumerated in this page. Cotton hosiery, valued at

* The pottery manufacture carried on at Colebrook-Dale, Worcester, and Derby, is confined chiefly, if not altogether, to fine china, or porcelain.

† In considering the growth of the cotton manufacture, it is of importance to notice the dates of the adoption of the mechanical inventions by which its progress has been so rapidly accelerated. About 1790, Sir Richard Arkwright's inventions were thrown open to the public by the setting aside of his patent in the court of King's Bench. Five years earlier, the first application of Mr. Watt's steam-engine to a cotton-mill had been effected at Papplewick in Nottinghamshire; and in 1801, Dr. Cartwright's power-loom, invented in 1787, was first brought into practical use through the exertions and enterprise of Mr. Monteith of Pollockshaws, near Glasgow.

£880,000, and worsted hosiery at £870,000, are annually produced, and the manufacture gives employment to about 73,000 persons. Lace also is made in large quantities in the mid-land counties, and commands a ready sale in all foreign markets. The produce of this manufacture (or the "bobbin-net trade," as it is sometimes called), is valued at £1,797,850 yearly, and it furnishes employment to from about 150,000 to 200,000 persons. The capital embarked in the lace and hosiery manufactures may, taking them together, be about £2,800,000. The value of the annual produce of the various branches of the leather manufacture is estimated at £13,000,000, and that of the hat trade, including the manufacture of felt caps for soldiers, at £2,420,000. The quantity of soap and candles made in Britain is most enormous. According to Excise returns, 156,762,610 lbs. of hard, and 9,515,761 lbs. of soft soap, were made in 1846; and in 1829, duty was paid on 116,206,541 lbs. of candles. The annual value of these two articles will be little less than £7,000,000. The remaining branches of manufacture are too numerous to be specified, and are relatively unimportant, though several would be considered of great importance in any other country. Take, for instance, the watch manufacture, which is valued at £1,500,000 a-year, and that of paper, the value of the yearly produce of which (exclusive of the duty on the manufactured article) may be £1,300,000. Printing and bookselling form a very extensive and rapidly increasing branch of trade, particularly in London.

The distribution and extent of the manufacture of woven fabricks throughout the kingdom generally, will be seen from the following table,* which exhibits the number of factories in operation in 1835, distinguishing the branches of manufacture therein carried on, and the number of persons employed in each: —

	Cotton Factories.		*Woollen Factories.*		*Silk Factories.*		*Flax Factories.*	
COUNTIES.	N°.	Persons employed.	N°.	Persons employed.	N°.	Persons employed.	N°.	Persons employed.
Berks,	....	.....	....	.....	3	225	..	.....
Buckingham,	....	.....	....	.....	2	157	..	.....
Chester,	109	31,512	15	265	88	10,706	..	.....
Cornwall,	....	.....	9	201	..	.....	..	.....
Cumberland,	13	1,658	15	271	..	.....	7	239
Derby,	92	10,850	5	171	15	2,725	2	84
Devon,	....	.....	36	1,415	4	496	4	142
Dorset,	....	.....	4	107	5	282	21	710
Durham,	1	33	5	322	..	.....	6	601
Essex,	....	.....	....	.....	8	1,527	..	.....
Gloucester,	....	.....	118	7,973	2	84	..	.....
Hants,	....	.....	2	22	2	298	2	91
Hereford,	....	.....	2	19	..	.....	..	.....
Hertford,	....	.....	....	.....	7	1,118	..	.....
Kent,	....	.....	1	17	1	42	1	62
Lancaster,	683	122,415	106	5,066	23	5,038	18	3,024
Leicester,	6	592	21	1,205	..	.....	..	.....
Lincoln,	....	.....	1	29	..	.....	..	.....
Middlesex,	7	350	2	30	..	.....	..	.....
Monmouth,	....	.....	3	20	..	.....	..	.....
Norfolk,	....	.....	5	198	4	1,289	..	.....
Northampton,	....	.....	2	70	1	no return.	..	.....
Northumberland,	....	.....	3	40	..	.....	2	242
Nottingham,	20	1,723	....	.....	3	336	1	9
Oxford,	....	.....	9	313	1	42	1	16
Salop,	....	.....	3	100	..	.....	1	686
Somerset,	....	.....	36	1,891	23	1,890	13	367
Stafford,	13	2,048	3	143	11	1,463	..	.....
Suffolk,	....	.....	....	.....	1	110	..	.....
Surrey,	....	.....	6	67	2	125	..	.....
Warwick,	....	.....	5	196	5	131	..	.....
Westmoreland,	....	.....	14	428	..	.....	4	294
Wilts,	....	.....	63	3,250	4	457	1	24
Worcester,	....	.....	6	734	8	288	..	.....
York (N. R.),	....	.....	....	.....	..	.....	4	164
York (W. R.),	126	10,911	601	40,890	8	1,118	64	9,438
York (E. R.),	....	.....	1	8	..	.....	..	.....
Total—ENGLAND,	1,070	182,092	1,102	65,461	231	29,947	152	16,193
WALES,	5	1,151	85	785	..	.....	..	.....
SCOTLAND,	159	32,580	90	3,505	6	686	179	13,409
IRELAND,	28	4,311	36	1,523	1	49	25	3,681
UNITED KINGDOM,	1,262	220,134	1,313	71,274	238	30,682	347	33,283

* The number of persons employed in Great Britain in 1843, were 423,471.

The following is a summary of the number of power-looms used in these factories at the date already stated:—

	Cotton.	*Woollen.*	*Silk.*	*Flax.*	*Mixed Goods.**	TOTAL.
ENGLAND,	90,679	5,105	1,714	41	25	97,564
SCOTLAND,	17,531	22	....	168	....	17,721
IRELAND,	1,416	....	....	100	....	1,516
UNITED KINGDOM, ...	109,626	5,127	1,714	309	25	116,801

In respect to the persons employed in each branch of industry in the factories, the proportions as to age are as follows:—

Ages.	*Cotton.*	*Woollen.*	*Flax.*	*Silk.*
8 to 12	3.7	6.7	3.7	20.9
12 — 13	9.3	12.	12.2	8.7
13 — 18	29.8	29.8	36.1	30.8
Above 18	57.2	51.5	48.	39.6
	100.	100.	100.	100.

The proportions as to sex are:—

	Cotton.	*Woollen.*	*Flax.*	*Silk.*
Males, . .	45.7	52.5	31.2	33.2
Females, . .	54.3	47.5	68.8	66.8
	100.	100.	100.	100.

According to Mr. Baines, the number of hand-loom weavers engaged in the cotton manufacture is about 250,000. Mr. M'Culloch estimates the number of persons employed in the silk manufacture at upwards of 207,000; and the total number employed in the linen manufacture of Great Britain and Ireland at 185,000.

From the great extent to which the trades of brewing and distilling are carried on in this country, they are of too great importance to be here overlooked. The quantity of malt used for making beer in the United Kingdom during the year 1834 was 32,139,650 bushels; of this quantity 28,944,723 bushels were used in England, 1,339,601 in Scotland, and 2,055,326 in Ireland.

The following table exhibits the quantity of spirits distilled in the three kingdoms in 1838:—

	ENGLAND. *Gallons.*	SCOTLAND. *Gallons.*	IRELAND. *Gallons.*	Total. *Gallons.*
From malt only, . .	....	6,593,467	147,716	6,741,183
— malt and raw grain, .	5,776,255	2,453,732	10,917,104	19,147,091
— mangel wurzel, .	156	....	....	156
Total,	5,776,411	9,047,199	11,064,820	25,888,430

Of the above quantities, Scotland sent 1,828,732 gallons to England, of which 440 was made from malt; and 868,744 gallons to Ireland, of which 3,130 was from malt.

The home consumption during the same year was—

	Malt Spirits. *Gallons.*	Grain Spirits. *Gallons.*	Total. *Gallons.*
In England, . .	443,130	7,847,360	8,290,490
— Scotland, . . .	5,764,148	585,563	6,349,711
— Ireland, . . .	536,995	11,759,387	12,296,382
	6,744,273	20,192,310	26,936,583

The number of bushels of malt from barley, charged with duties of Excise in 1847, for the United Kingdom, was 41,500,341, of which there was used in England, 35,723,774; in Scotland, 4,172,256; in Ireland, 1,604,311. Of bear or bigg, there was used in Scotland, 412,410 bushels, and in Ireland, 184,332.

§ 5. *Commerce.*

The wealth and enterprise of the most distinguished commercial nations of ancient or modern times, of which history has transmitted to us the records, sink into insignificance when compared with the commercial greatness of Britain. The inland commerce is perhaps the richest, the most extensive, and the most active that exists in any country; while the foreign trade extends to every accessible region of the world. Every article manufactured in the country, which will command a sale in a foreign market, is exported, and its value returned to the country either in money or in goods.

* The materials used are worsted, cotton, silk, and India-rubber thread; the articles manufactured are girths, belts, braces, garters, and the like.

The imports from different countries, together with an enumeration of the articles exported to each, have been arranged, for distinctness, in the following Table, the details in which are taken (in an abridged form) from Mr. M'Culloch's statements respecting the foreign trade of Great Britain.

Countries.	*Articles* IMPORTED INTO *Great Britain.*	*Articles* EXPORTED FROM *Great Britain.*
IRELAND, . . .	Linen, grain, flour, meal, live cattle and pigs, barrelled beef and pork, butter, lard, &c. — in all of the value of £8,000,000 or £9,000,000 annually.	Cottons, woollens, hardware, and other British manufactures; tea, sugar, wine, &c.
RUSSIA, . . .	Tallow, corn, flax, hemp, flax-seed, linseed, timber, bristles, ashes, hides, iron, and tar.	Cotton-twist, woollens, salt, coal, hardware, lead and shot, tin, machinery, &c.
SWEDEN & NORWAY, . .	Timber, iron, bark, smaltz,* &c.	Cottons, cotton-twist, woollens, earthenware, hardware, coffee, indigo, tobacco, sugar, spices, &c.
DENMARK, . .	Corn, and rape-seed, — and in small quantities, butter, bristles, wool, hides, and bark.	Coal, salt, iron, steel, earthenware, machinery, coffee, indigo, &c.
PRUSSIA, . . .	Wheat, timber. — and in small quantities, bark, bristles, wool, spelter (zinc), flax, &c.	Refined sugar and salt, — and indirectly through Hamburgh, cottons, hardware, earthenware, &c.
GERMANY, . .	Wool, corn, wine, butter, linens, hides, clover-seed, rape-seed, smaltz, spelter, smaltz and zaffre,* furs, wooden clocks, &c.	Cottons, cotton-twist, woollens, refined sugar, hardware, earthenware, iron, steel, coal, salt, indigo, rum, coffee, tobacco, cotton-wool, and spices.
HOLLAND & BELGIUM,	Butter, cheese, corn, madder, geneva, flax, tow, hides, linen, seeds, toys, &c.	Cottons, cotton-twist, woollens, hardware, earthenware, salt, coal, coffee, cocoa, indigo, and tobacco.
FRANCE, . .	Brandy, wine, silk (raw and manufactured), gloves, madder, eggs, skins, fruit, and some descriptions of hardware, jewellery, watches, toys, &c.	Wool, linens, linen-yarn, brass and copper manufactures, machinery, coal, horses, &c.
SPAIN & PORTUGAL, .	Wines (port and sherry), barilla, raisins and other dried fruits, lemons, oranges, olive-oil, quicksilver, and sometimes corn.	Cotton-stuffs, woollens, linens, hardware, cutlery, iron, steel, soap, candles, leather, &c.; also cinnamon, for which Spain is our largest customer.
ITALY, . . .	Thrown-silk, olive-oil, straw-plait, straw-hats, straw to be made into plait, wheat (chiefly at second-hand, from the Black Sea), currants, lemons, oranges, wine, barilla, shumac, bark, cheese, lamb-skins, hemp, &c.	Cotton-stuffs, cotton-twist, refined sugar, woollens, hardware, cutlery, iron, steel, coffee, indigo, tobacco, pimento, &c.
TURKEY, GREECE, &c. . .	Silk, opium, madder, figs, raisins, valonia,† oil, cotton-wool, currants, senna, &c.	Cottons, cotton-twist, — a considerable quantity of indigo and coffee, and a small supply of linens, hardware, iron, steel, cordage, woollens, earthenware, &c.
EGYPT, . .	Cotton-wool, flax, linseed, and senna and other drugs.	Cotton-stuffs, iron, steel, arms, ammunition, machinery, &c.
WESTERN AFRICA (Sierra Leone)	Palm-oil, ivory, teak-timber, wax, hides, dye-woods, &c.	Cottons, guns and pistols, hardwood, salt, soap, candles, &c.
CAPE OF GOOD HOPE, . .	Wine (of an inferior quality, with the exception of Constantia), hides, ivory, skins, aloes, &c.	Cotton, woollen and linen stuffs, apparel, earthenware, hardware, iron, steel, soap, candles, stationery, &c.
MAURITIUS, . .	Sugar.	Cottons, linens, iron, steel, machinery, apparel, &c.
ASIA & AUSTRALIA, . .	From *China*, — Tea; from *Hindostan*, — Indigo, cotton-wool, sugar, silk, coffee, pepper, saltpetre, picce-goods, rice, lac-dye, &c.; from *Ceylon*, — Cinnamon, cocoa-nut oil, ivory, &c.; from the other *Indian Islands*, — Tin, pepper, mace and cloves; from *Australia*, — Wool, sperm and other oils, and sometimes bark.	Cotton-stuffs and twist (these in large quantities to Hindostan), woollens, linens, earthenware, copper, hardware, iron, steel, leather, glass, machinery, &c.
BRITISH NORTH AMERICA,	Timber, fish, furs, wheat, ashes, skins, turpentine, &c.	Woollens, cottons, linen, hardware, iron, steel, soap, candles, earthenware, apparel, glass, cordage, coal, butter, cheese, &c.
BRITISH WEST INDIES,	Sugar, coffee, rum, cotton, pimento, molasses, mahogany, logwood, fustic, cocoa, cochineal, ginger, hides, &c.	Cottons, linens, woollens, apparel, soap, candles, hardware, iron, steel, fish, earthenware, cordage, beef, pork, arms and ammunition, &c.
UNITED STATES, .	Cotton-wool, tobacco, flour, wheat, rice, skins, furs, hides, staves, &c.	Cottons, linens, woollens, hardware, cutlery, earthenware, salt, brass, copper, apparel, books, &c.
SOUTH AMERICAN STATES,	Cotton-wool, sugar, coffee, bullion, precious stones, cocoa, hides, fruits, bark, dye-woods, and furs.	Cottons, linens, woollens, earthenware, hardware, soap, candles, &c.
FOREIGN WEST INDIES,	Sugar, coffee, cotton-wool, cigars, &c.	Cottons, earthenware, linens, hardware, iron, steel, woollens, glass, machinery, &c.

* *Smaltz* and *zaffre* are preparations from cobalt, extensively used in colouring earthenware and glass, to both of which they communicate a blue tint.

† A species of acorn, used in the process of tanning.

To show the *value and direction* of the Colonial and Foreign trade of Britain, we subjoin the four following tables:—

I. TABLE exhibiting the Total Amount (according to the official Rates of Valuation) of the Foreign IMPORT TRADE of the United Kingdom, during the Years 1835, 1836, and 1837.

Importing Countries.	1835.	1836.	1837.
GREAT BRITAIN,.....	£47,463,610	£55,733,418	£53,224,874
IRELAND, ...	1,447,932	1,497,549	1,512,427
Total,.....	£48,911,542	£57,230,967	£54,737,301

II. TABLE exhibiting the Total Value or Amount of the Foreign EXPORT TRADE of the United Kingdom, for the Years 1835, 1836, and 1837.

Exporting Countries.	*Produce and Manufactures of the United Kingdom, according to the Real or Declared Value.*			*Foreign and Colonial Merchandise, calculated at the Official Rates of Valuation.*		
	1835.	1836.	1837.	1835.	1836.	1837.
GREAT BRITAIN,..	£46,926,370	£53,015,431	£41,911,898	£12,783,802	£12,384,538	£13,233,331
IRELAND,.....	445,900	353,141	303,040	13,922	7,174	10,291
Total,....	£47,372,270	£53,368,572	£42,214,938	£12,797,724	£13,233,622	£13,233,622

III. TABLE exhibiting the Quantity and Declared or Real Value of each of the principal Articles of British and Irish MANUFACTURES and PRODUCE *exported* from the United Kingdom in each of the Years 1836 and 1837.

Articles.	1836.		1837.	
	Quantity.	*Value.*	*Quantity.*	*Value.*
Apparel,..... *Value*	. . .	£1,292,379	....	£950,951
Arms and ammunition,..... —	....	411,286	....	289,142
Bacon and hams,..... *Cwts.*	14,536	44,883	12,312	37,549
Beef and pork (salted),..... *Barrels*	48,832	164,920	48,604	164,196
Beer and ale,..... *Tons*	15,148	270,915	15,588	273,122
Books (printed),..... *Cwts.*	8,257	178,945	7,120	147,772
Brass and copper manufactures,..... —	204,835	1,072,344	250,105	1,166,277
Butter and cheese,..... —	75,243	300,674	60,054	242,610
Coal-culm and cinders,..... *Tons*	916,868	332,861	1,113,610	431,545
Cordage,..... *Cwts.*	53,058	87,401	43,763	77,451
Cotton manufactures,..... *Yards*	637,667,627	17,183,167	531,373,663	12,727,989
Cotton-twist and yarn,..... *lbs.*	88,191,046	6,120,366	103,455,138	6,955,942
Cotton-hosiery, lace and small wares,.... *Value*	....	1,328,525	....	912,192
Earthenware,..... *Pieces*	62,795,317	837,774	48,366,457	563,238
Fish (herrings),..... *Barrels*	131,141	134,590	134,351	145,632
Glass (entered by weight),..... *Cwts.*	250,974	536,601	264,789	467,307
—— (entered at value),..... *Value*	....	16,783	....	10,460
Hardware and cutlery,..... *Cwts.*	421,442	2,271,313	267,433	1,460,807
Hats (beaver and felt),..... *Dozens*	53,984	148,282	37,178	105,135
Iron and steel,..... *Tons*	192,352	2,342,674	194,292	2,009,259
Lead and shot,..... —	9,769	224,981	7,864	155,251
Leather (wrought and unwrought),..... *lbs.*	2,042,471	322,546	1,647,000	255,818
Saddlery and harness,..... *Value*	....	94,059	....	87,938
Linen manufactures (entered by the yard), *Yds.*	82,088,760	3,238,031	58,426,333	2,063,425
Linen thread, tapes and small wares,..... *Value*	....	88,294	....	64,020
Linen yarn,..... *lbs.*	4,574,504	318,772	8,373,100	479,307
Machinery and mill-work,..... *Value*	....	302,092	....	493,468
Painters' colours,..... —	....	210,900	....	151,513
Plate, plated-ware, jewellery and watches, —	....	338,889	....	258,076
Salt,..... *Bushels*	9,622,427	173,923	9,961,884	193,621
Silk manufactures,..... *Value*	....	917,822	....	503,673
Soap and candles,..... *lbs.*	15,813,406	295,510	13,864,022	251,023
Stationery,..... *Value*	....	301,121	....	198,349
Sugar (refined),..... *Cwts.*	248,644	698,190	227,807	453,984
Tin (unwrought),..... —	11,152	61,847	17,271	74,737
Tin and pewter wares, and tin-plates,..... *Value*	....	387 951	....	371.848
Wool (sheep's and lamb's),..... *lbs.*	3,942,407	332,374	2,647,874	185,350
Woollen manufactures, viz.				
Entered by the piece,..... *Pieces*	2,224,566	6,647,392	1,519,433	4,034,000
Entered by the yard..... *Yards*	9,099,824	754,364	5,923,076	487,194
Hosiery and small wares,..... *Value*	....	237,598	....	134,783
Woollen and worsted yarn,..... *lbs.*	2,546,177	358,690	2,513,718	333,098
All other articles,..... *Value*	....	1,986,543	....	1,701,092
TOTAL DECLARED VALUE,.....	....	£53,368,572	.....	£12,070,744

IV. TABLE exhibiting, in detail, a Comparative View of the Colonial and Foreign EXPORT TRADE of the United Kingdom in 1837 and 1834; also the Value of the IMPORTS from each Colony or Foreign Country during the latter Year.

Countries.	*Exports from the United Kingdom. (Declared Value.)* 1837.	1834.	*Imports into the United Kingdom in* 1834. *(Official Val.)*
Germany,	£4,898,016	£4,547,166	£1,437,977
United States of America,	4,695,225	6,844,989	10,276,628
East India Company's territories and Ceylon,	3,612,975	2,578,569	4,317,639
British West Indies,	3,456,745	2,680,024	8,410,114
Holland,	3,040,029	2,470,267	1,105,676
Italy and the Italian islands,	2,406,066	3,282,777	1,199,210
British North America,	2,141,035	1,671,069	1,167,823
Russia,	2,046,592	1,382,300	4,128,844
Brazil,	1,824,082	2,460,679	1,397,305
France,	1,643,204	1,116,885	2,808,256
Portugal (including the Açores, Madeira, and Cape Verd Isles),	1,183,015	1,702,383	731,816
Turkey,	1,158,013	1,207,941	741,280
Hayti, Cuba, and other Foreign West Indies,	1,062,763	1,270,302	340,289
New South Wales and other Australian settlements,	921,568	716,014	249,415
Gibraltar,	906,155	460,719	47,355
Belgium,	804,917	750,059	304,239
States of the Rio de la Plata,	696,104	831,564	660,120
China,	678,375	842,852	3,506,923
Chili,	625,545	896,221	142,765
Mexico,	520,208	459,610	261,417
Cape of Good Hope,	488,814	304,382	248,760
Peru,	476,374	299,235	123,086
Mauritius,	349,488	149,319	782,148
Sumatra, Java, the Philippines, and other islands in the Indian seas,	347,599	506,633	993,936*
Guernsey, Jersey, Alderney, Man, &c.	330,017	360,665	231,956
Spain (including the Canaries),	328,540	356,593	1,050,592
Western coast of Africa,	312,938	326,483	475,570†
Egypt,	220,080	158,877	32,331
Columbia,	170,451	199,996	117,209
Prussia,	131,536	136,423	723,888
Ionian Islands,	124,465	94,498	207,393
Malta,	103,680	242,696	14,956
Denmark,	103,448	94,595	331,816
Sweden,	101,121	63,094	206,342
Norway,	72,413	61,988	88,774
Tripoli, Tunis, Algiers, and Morocco,	54,007	14,823	128,248
Morea and Greek Islands,	15,431	37,179	43,367
St. Helena,	9,645	31,615	2,184
Syria and Palestine,	5,413	....	....
Isle of Bourbon,	3,795	7,091	....
Arabia,	787	250	....
Guatemala,	78	30,366	13,739
TOTALS,	£42,070,744	£41,649,191	£49,051,416

In selecting the details given in the foregoing tables, we have been guided by considerations as much of necessity as convenience. A full account of the export trade of the kingdom, up to the year 1837, is to be found in official publications; but it is otherwise with the import trade, as we have been unable to discover any notice of its amount, distinguishing the several countries with which it is conducted, later than 1834. We have, therefore, in the fourth table, thought it proper to state in an opposite column the value of the exports to these countries during the same year. In comparing the value of the exports during the several years indicated in the third and fourth tables, our readers must have remarked the extraordinary fluctuations which takes place in this branch of British commerce, and especially the prodigious falling off in the quantity and value of the exports of 1837, as compared with those of 1836. The latter year, however, was marked by great commercial activity, and the former by considerable mercantile depression and embarrasment, principally occasioned by the unsettled state of the trade between this country and the United States, one of the great markets for our cotton and other manufactures. A reaction has since taken place, for in 1838 the exports of cottons, woollens, linens, hardware, and the metals, amounted in value to about £39,000,000, being nearly £5,500,000 above the value of these articles exported in 1837, though £4,700,000 short of the value of the same exports in 1836. Before quitting this subject, we may remark, in reference to the foregoing tables, that although the *official*, or custom-house rate of valuation, greatly exaggerates the value of manufactured articles exported, yet it furnishes, in a manner nearer the truth, the value of imported merchandise. Accordingly, both the *official* and the *declared*, or *real values*, quoted in these tables, may be looked

upon as nearly correct.* We have not the means of reconciling the discrepancy in the amount of exports, as given in the second and third tables. The statement in both instances was derived from the same official publication.

The *distribution of the Foreign trade of the kingdom among the different sea-ports*, may in part be ascertained by a reference to the amount of duties collected at each custom-house. In thus determining the relative importance of the trade of a port, it ought, however, to be kept in mind that a very considerable *export* trade may be carried on from a port where but a trifling amount of *import* duties is collected; and it will also be seen from a table afterwards to be given, that the ports respectively take a different order of importance in regard to the shipping and tonnage belonging to each.

ENGLAND.	Amount collected. L. s. d.
London	10,885,156 5 8
Aberystwith	158 9 4
Aldborough	..
Arundel	2,453 7 4
Barnstaple	6,120 17 11
Beaumaris	4,993 10 10
Berwick	15,728 14 0
Bideford	5,044 19 11
Blackney	1,350 10 0
Boston	40,064 9 3
Bridgewater	5,487 15 6
Bridlington	358 11 8
Bridport	2,871 18 2
Bristol	911,314 13 0
Cardiff	8,958 5 1
Cardigan	111 17 4
Carlisle	48,122 3 8
Carnarvon	7,216 10 5
Chepstow	11,940 10 2
Chester	94,264 6 9
Chichester	320 9 11
Colchester	14,220 8 4
Cowes	2,347 12 0
Dartmouth	4,075 3 8
Deal	1,077 3 8
Dover	23,590 14 1
Exeter	97,715 17 6
Falmouth	12,118 3 7
Faversham	4,351 0 2
Fowey	4,994 9 7
Gainsborough	61,903 0 0
Gloucester	115,982 10 10
Goole	44,919 19 11
Grimsby	32,736 3 0
Guernsey	..
Gweek	1,215 0 5
Harwich	1,966 6 4
Hartlepool	4,374 6 7
Hull	460,202 13 6
Ipswich	37,012 15 0
Jersey	5 0 0
St. Ives	1,592 5 8
Isle of Man	26,662 0 6
Lancaster	30,774 10 11
Llanelly	953 6 2
Liverpool	3,622,056 12 0
Lyme	2,141 15 0
Lynn	49,613 1 5
Manchester	187,322 1 3
Maldon	1,550 8 6
Maryport	7,716 2 4
Milford	2,916 17 5
Newcastle	483,769 19 1
Newhaven	13,480 19 1
Newport	11,191 18 8
Padstow	1,064 17 2
Penzance	16,475 0 3
Plymouth	108,055 4 5
Poole	8,856 2 11
Portsmouth	60,576 19 10
Preston	83,963 2 6
Ramsgate	10,043 11 9
Rochester	16,922 9 9

ENGLAND—*continued.*	Amount collected. L. s. d.
Rye	2,093 5 1
Scarborough	4,045 0 8
Scilly	61 8 10
Shoreham	25,182 8 1
Southampton	59,741 12 5
Southwold	..
Stockton	81,654 15 10
Sunderland	68,806 9 2
Swansea	46,132 8 7
Truro	19,824 15 7
Wells	23 7 10
Weymouth	8,170 3 8
Whitby	11,060 18 9
Whitehaven	68,727 9 0
Wisbeach	14,751 6 3
Woodbridge	3,233 13 2
Yarmouth	59,784 6 0
SCOTLAND.	
Aberdeen	81,433 4 5
Alloa	1,859 3 0
Ayr	614 6 9
Arbroath	6,572 7 2
Banff	1,848 17 5
Borrowstoness	1,856 4 0
Campbeltown	9 10 1
Dumfries	11,774 14 1
Dundee	57,028 15 1
Glasgow	634,305 13 8
Grangemouth	21,103 18 9
Greenock	324,477 7 9
Inverness	6,154 10 7
Irvine	3,148 1 9
Kirkaldy	9,097 10 7
Kirkwall	961 17 10
Leith	578,590 5 8
Lerwick	549 15 3
Montrose	26,153 5 8
Port Glasgow	135,848 6 8
Perth	13,954 6 8
Stornoway	1,009 7 7
Stanraer	112 0 6
Wick	1,232 11 5
IRELAND.	
Baltimore	784 10 6
Belfast	363,577 6 8
Coleraine	4,856 16 11
Cork	319,647 14 5
Drogheda	16,792 13 11
Dublin	1,092,436 19 6
Dundalk	40,666 13 11
Galway	41,024 15 7
Limerick	218,807 0 6
Londonderry	125,784 10 10
Newry	41,845 10 4
Ross	14,329 14 2
Sligo	35,470 14 2
Tralee	800 14 11
Waterford	178,807 3 0
Westport	18,036 6 0
Wexford	13,551 2 9

The vast size of the *British Mercantile Navy*, together with its progress since the commencement of the present century, will be seen in the following—

TABLE exhibiting the NUMBER and TONNAGE of VESSELS, with the NUMBER of their CREWS, belonging to the BRITISH EMPIRE on the 31st December 1845 and 1846 respectively; also the same on the 30th September 1800.

	1845.			1846.			1800.		
	Vessels.	Tons.	Men.	Vessels.	Tons.	Men.	Vessels.	Tons.	Men.
United Kingdom,	23,621	3,073,537	177,761	24,002	3,148,323	180,653	15,356	1,682,405	123,977
Guernsey, Jersey, and Man.	767	49,643	5,405	769	51,462	5,516	368	16,110	2,697
British Plantations,	7,429	590,881	41,734	7,728	617,327	43,107	2,161	157,364	12,047
TOTAL,	31,817	3,714,061	224,900	32,499	3,817,112	229,276	17,885	1,855,879	138,721

* The *official* rates of valuation were fixed in the year 1694; and as they have not since been altered, they are consequently inapplicable to articles, in the production of which improved machinery or processes have been employed.

That portion of the mercantile navy belonging to England was, by a late return, thus distributed among its different ports :—

Ports.	*Ships.*	*Tons.*	*Men.*	*Ports.*	*Ships.*	*Tons.*	*Men.*
London,	2,828	566,152	32,392	Ramsgate,	85	5,516	332
Newcastle,	1,054	208,100	9,665	Berwick,	55	5,160	318
Liverpool,	996	207,833	11,511	Penzance,	94	5,002	474
Sunderland,	712	132,070	5,952	Rye,	90	4,699	361
Whitehaven,	443	65,878	3,490	Chepstow,	68	4,580	312
Hull,	503	63,524	3,783	Padstow,	81	4,533	301
Bristol,	281	42,913	3,899	Bridlington,	30	4,160	192
Yarmouth,	577	42,583	2,324	Ilfracombe,	63	3,897	222
Whitby,	252	39,954	2,065	Cardiff,	48	3,735	213
Plymouth,	373	30,701	1,805	Blackney and Clay,	64	3,734	258
Scarborough,	172	27,052	1,389	Llanelly,	72	3,637	236
Dartmouth,	373	27,140	1,760	Carlisle,	39	3,419	209
Beaumaris,	395	21,885	1,453	Wisbeach,	48	3,374	181
Exeter,	192	15,979	875	Shorcham,	55	3,372	225
Lynn,	120	15,283	736	Wells,	63	3,287	244
Poole,	153	15,113	939	Arundel,	35	3,034	171
Cardigan,	275	14,436	1,030	Woodbridge,	38	2,682	146
Stockton,	104	13,308	619	Chichester,	59	2,620	164
Gloucester,	246	13,237	1,113	Truro,	34	2,411	142
Goole,	167	12,586	469	Southwold,	34	2,310	164
Rochester,	274	12,364	744	Aldborough,	39	2,170	162
Ipswich,	154	11,308	595	Barnstaple,	37	2,063	119
Portsmouth,	201	11,968	730	Scilly,	41	2,038	236
Milford,	152	10,376	634	Bridport,	19	1,932	99
Lancaster,	131	9,633	527	Newhaven,	20	1,476	66
Bideford,	115	9,509	545	Lyme,	19	1,382	83
St. Ives,	117	9,019	608	Grimsby,	33	1,187	92
Boston,	175	8,982	528	Minehead (*Port of Bridgewater*),	....	.....	....
Swansea,	137	8,918	565	Gweek,	11	688	43
Colchester,	236	8,648	940	Deal,	23	641	132
Cowes,	170	8,530	737				
Southampton,	177	8,363	668				
Faversham,	229	8,270	594	Total,—			
Maldon,	136	6,955	413	England,	14,823	1,853,112	105,945*
Fowey,	95	6,827	411	Scotland,	3,287	335,820	23,924
Aberystwith,	129	6,737	442	Ireland,	1,627	131,735	9,282
Falmouth,	86	6,732	441	British Isles,	563	39,636	3,958
Newport,	61	6,082	323	Colonies,	5,211	423,458	27,911
Bridgewater,	77	5,796	615				
Dover,	111	5,702	355	Grand Total,	25,511	2,783,761	171,020
Weymouth,	73	5,698	306				
Chester,	85	5,627	429				
Harwich,	89	5,572	403				

There are no means of determining the actual number of ships and amount of tonnage employed in the *Coasting trade*, as distinguished from the Foreign trade of the kingdom. The following table exhibits the total shipping and tonnage (including repeated voyages of the same vessels) annually employed in the Coasting trade generally, distinguishing, however, the portion employed in the traffic between Great Britain and Ireland.

	Entered Inwards.				Cleared Outwards.			
	Years ending 5th January,				Years ending 5th January,			
	1846.		1847.		1846.		1847.	
	Ships.	*Tonnage.*	*Ships.*	*Tonnage.*	*Ships.*	*Tonnage.*	*Ships.*	*Tonnage.*
Employed in the Intercourse between Great Britain and Ireland.	11,481	1,511,023	9,133	1,416,130	19,785	2,111,481	19,624	2,211,696
Other Coasting Vessels,	133,427	10,974,831	131,983	10,569,279	118,616	11,002,623	137,051	10,769,760
Total,	144,908	12,485,854	141,116	11,985,409	138,454	13,114,104	156,675	12,981,456

The number and tonnage of vessels employed in the *Foreign trade* of the United Kingdom, and which entered inwards and cleared outwards at its several ports, during the two years undermentioned, was as follows (repeated voyages of the same vessels being included) :—

* The numbers in this column do not correspond with the added result, but the difference is not sufficiently great to warrant the exclusion of an official table correct in other respects.

Countries to which the Vessels belonged.	Entered Inwards. Year ending 5th January, 1846. Vessels.	Tons.	1847. Vessels.	Tons.	Cleared Outwards. Year ending 5th January, 1846. Vessels.	Tons.	1847. Vessels.	Tons.
United Kingdom and its Dependencies,	15,964	3,669,853	16,156	3,622,808	14,515	2,947,257	15,196	3,091,348
Russia,	276	77,288	264	68,995	193	52,597	175	46,653
Sweden,	312	44,592	350	44,648	290	41,134	312	37,155
Norway,	1,127	177,182	1,007	157,992	528	63,832	456	51,471
Denmark,	1,002	75,659	1,121	100,120	1,583	123,259	1,767	133,041
Prussia,	1,234	240,699	1,205	329,326	1,055	184,940	1,028	179,204
Other German States,	1,115	98,690	1,429	129,406	1,471	137,566	1,986	149,846
Holland,	714	55,838	670	53,538	866	78,453	693	62,504
Belgium,	248	33,809	279	38,391	353	48,233	319	44,615
France,	796	38,319	817	58,039	1,909	154,951	1,997	172,874
Spain,	96	13,691	128	21,311	95	12,322	120	17,541
Portugal,	47	4,893	111	13,353	38	4,124	47	5,058
Italian States,	150	39,092	228	57,498	170	42,250	287	71,853
Other European States,	12	2,867	24	7,349	9	2,489	18	4,630
United States of America,	758	448,106	753	436,397	689	413,960	652	400,497
Other States in America, Africa, or Asia,	8	2,950	6	1,600	7	1,830	3	835
Total,	23,859	5,023,588	24,848	5,030,771	23,771	4,369,197	24,656	4,469,125

The following table by Mr. Porter exhibits the actual and proportionate amount of *tonnage employed in our commerce with the principal geographical divisions of the world* in 1835, and also the same in 1802; thus affording the means of ascertaining the increase of the import and export trade of the United Kingdom between the one period and the other.

Principal Geographical Divisions.	Inwards. 1802. Actual Amount of British and Foreign Tonnage employed.	Centesimal Proportions.	1835. Actual Amount of British and Foreign Tonnage employed.	Centesimal Proportions.	Outwards. 1802. Actual Amount of British and Foreign Tonnage employed.	Centesimal Proportions.	1835. Actual Amount of British and Foreign Tonnage employed.	Centesimal Proportions.
European Kingdoms or States,	1,178,705	65.00	1,615,036	48.79	1,034,517	63.28	1,615,563	48.59
British Dominions in Europe (excluding Ireland),	67,878	3.79	172,483	5.21	60,275	3.69	165,233	4.97
United States of America,	111,118	6.12	318,846	9.63	123,108	7.53	370,924	11.15
Foreign Colonies, &c. in West Indies and America,	7,866	0.43	87,604	2.64	1,804	0.11	101,806	3.06
British Colonies in West Indies and America,	336,344	18.54	866,524	26.21	268,463	16.42	803,596	24.17
Africa,	7,270	0.40	40,131	1.21	44,070	2.70	48,586	1.46
Cape of Good Hope and India,	67,627	3.72	161,473	4.88	59,546	3.64	149,958	4.51
New South Wales, &c.	....	...	16,019	0.48	....	...	35,919	1.08
Greenland and Southern Fisheries,	36,448	2.00	31,608	0.95	43,021	2,63	33,626	1.01
Total,	1,813,256	100.00	3,309,724	100.00	1,634,804	100.00	3,325,211	100.00

There is one branch of the mercantile navy of the United Kingdom which merits especial notice, namely, the *Steam Marine*, of which it may truly be said, that the progress has been quite unprecedented. On the 18th January 1812, Henry Bell's diminutive steam-boat, the "*Comet*," of 30 tons burden and 3-horse engine-power, was launched on the waters of the Clyde; and little indeed could the most sanguine then have imagined, that in twenty-six years after the date of this humble commencement of European steam-navigation, magnificent vessels of 1400 and 1800 tons burden, propelled by engines of 460 and 500 horse-power, would bring the shores of Britain and America within thirteen days sail of each other.* The progress of the British steam mercantile navy, from the date of its commencement to 1836, is lucidly stated in the following table by Mr. Porter, which we have brought up to the year 1837.

* Steam navigation may be dated from the establishment, in 1806 or 1807, of Fulton's steam-boat, which plied successfully on the river Hudson, between New York and Albany.

TABLE exhibiting the NUMBER and TONNAGE of the MERCANTILE STEAM-VESSELS belonging to the British Empire in each Year from 1814 to 1837.

	ENGLAND.		SCOTLAND.		IRELAND.		GUERNSEY, &c.		COLONIES.		TOTAL.	
Years.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1814	. . .	. . .	1	69	. . .	. . .	. . .	. . .	1	337	2	456
1815	3	209	5	429	. . .	. . .	. . .	. . .	2	995	10	1,633
1816	5	315	7	632	. . .	. . .	. . .	. . .	3	1,665	15	2,612
1817	7	462	6	514	1	63	. . .	. . .	5	2,911	19	3,950
1818	10	1,586	8	683	1	63	. . .	. . .	8	4,109	27	6,441
1819	11	1,459	11	825	2	264	. . .	. . .	8	4,109	32	6,657
1820	17	1,639	14	1,127	3	252	. . .	. . .	9	4,225	43	7,243
1821	29	3,377	26	2,344	4	330	. . .	. . .	10	4,483	69	10,534
1822	52	5,322	28	2,701	5	434	. . .	. . .	11	4,668	96	13,125
1823	69	7,527	26	2,347	6	487	. . .	. . .	10	3,792	111	14,153
1824	80	8,642	29	2,682	5	409	2	214	10	3,792	126	15,739
1825	112	12,280	36	3,292	3	192	2	214	15	4,309	168	20,287
1826	162	16,791	51	4,496	15	2,899	2	214	18	4,558	248	28,958
1827	173	17,734	59	5,390	21	4,194	2	214	20	4,958	275	32,490
1828	191	18,367	56	4,903	25	4,740	2	214	19	3,808	293	32,032
1829	203	19,085	57	5,399	27	5,017	2	214	15	2,568	304	32,283
1830	203	18,831	61	5,687	31	5,491	3	330	17	3 105	315	33,444
1831	223	20,304	62	5,777	35	6,181	4	433	23	4,750	347	37,445
1832	235	20,813	73	7,205	40	7,240	4	474	28	5,957	380	41,669
1833	268	23,290	71	7,075	43	7,757	5	555	28	6,340	415	45,017
1834	301	27,059	77	8,187	46	8,183	6	711	32	6,595	462	50,735
1835	344	30,351	85	9,833	68	12,583	6	718	35	7,035	538	60,520
1836	388	34,314	95	11,588	71	13,460	7	914	39	7,693	600	67,969
1837	422	37,240	109	13,368	87	18,437	6	832	44	8,411	668	78,288

The following tabular statement of the approximate *number*, *tonnage*, and *power* of *vessels composing the mercantile steam marine of the United Kingdom and its dependencies*, at the end of 1838, is extracted from a parliamentary paper:—

	Vessels.	*Tonnage.*		*Horse Power.*
		Registered.	Computed.	
Great Britain and Ireland (1838)—				
Registered,	677	78,664	140,718	56,490
Not Registered,	83			
Guernsey, Jersey, and Man (1837),	6	832	1,458	600
Colonies (1837),	44	8,411	15,664	6,160
GRAND TOTAL,	810	87,907	157,840	63,250

From this statement it would appear, that the number of steam-vessels belonging at that date to the United Kingdom and Channel dependencies was 766. Of these, 484 may be considered as river-steamers and small coasters, and 282 as large coasters and sea-going ships. A return by the Custom-house affords the following details in regard to the 677 registered vessels :—

Number of Vessels.	*Computed Horse-power per vessel.*	*Computed Tonnage per vessel.*
256	25	66
145	47	122
84	90	211
63	120	287
76	147	361
41	266	532
10	300	769
1	450	1,340
1	500	1,855

The number of steam-vessels built and registered in the British Empire in 1846, was 88, with a tonnage of 17,172. Of these, 11 were built in the Colonies, having a tonnage of 1,216. The number of steam-vessels belonging to the Empire was, in the same year, 957, with a tonnage of 130,240. The isles of Guernsey, Jersey, and Man, had 6, with 1,016 tonnage; and 107 belonged to the Colonies, having 13,528 of a tonnage.

It would be a difficult matter to ascertain the amount of traffic as regards passengers and goods conveyed by steamers, no entry being required at the Custom-house for vessels with passengers only, or in ballast. From one of Mr. Porter's tables,* it

* *Progress of the Nation*,—Second Section—Chap. *Steam Navigation.*

appears that in 1833 the approximate total number and tonnage of vessels, British and Foreign, conveying passengers and goods, which arrived at and departed from the ports of the United Kingdom (including repeated voyages), was 25,705 vessels of 3,597,955 aggregate tonnage. The Custom-house return for 1837 was as follows:—

Countries to which the Vessels belonged.	Coasting Trade.				Foreign Voyages.			
	Inwards.		Outwards.		Inwards.		Outwards.	
	Vessels.	*Tonnage.*	*Vessels.*	*Tonnage.*	*Vessels.*	*Tonnage.*	*Vessels.*	*Tonnage.*
United Kingdom,.....	15,481	2,671,577	15,019	2,604,739	1,123	217,640	1,278	234,919
Hanse Towns,.....	...	....	...	....	1	80	1	109
Holland,.....	...	....	...	....	32	7,164	40	10,080
Belgium,.....	...	....	...	....	25	4,925	27	5,319
France,.....	...	....	...	....	2	335	138	10,665
Spain,.....	...	....	...	....	...	....	1	165

In respect to import trade, and amount of shipping and tonnage, the relative importance of the several ports of England and Wales has been sufficiently indicated in the preceding tables; but it is not so easy accurately to define the *nature of the trade* carried on at each. London has for centuries been styled the "Great Emporium of Nations," as its commerce has extended, and still extends, to every region of the globe. It is, however, peculiarly the chief seat of British commerce with India and China. Liverpool and Bristol are the great seats of the American and West-Indian trades. Bristol, Hull, Newcastle, Whitehaven, Exeter, Yarmouth, Lynn, Scarborough, Dartmouth, &c. are largely engaged in the trade with Spain and Portugal and the Mediterranean. Hull, Newcastle, Plymouth, Sunderland, Yarmouth, Goole, Stockton, Lynn, Portsmouth, Southampton, &c., are the chief seats of the Baltic trade. Ipswich, Boston, Wisbeach, Yarmouth, Lynn, and Poole, are among the principal ports engaged in the corn trade. Nearly a fourth part of the tonnage engaged in the trade between Britain and Ireland enters the port of Liverpool; and the latter engrosses nearly a twentieth part of the other coasting-trade of the kingdom. The great ship-building ports, are, London, Sunderland, Newcastle, Hull, Liverpool, Yarmouth, &c. We have already mentioned (see *antè*, p. 203) the principal ports engaged in the distant fisheries.

The *internal trade* of England and of Great Britain generally, must be very great, but there are not sufficient data on which to found even an approximate estimate of its amount. The banking, or money-trade of England and Wales, was, in January 1839, conducted by 108 joint-stock banks, and 407 private banks, having in the aggregate 1208 establishments throughout the country.* In no other country in the world, with perhaps the exception of the United States of North America, has the joint-stock association principle been followed out to such a prodigious extent as in England. Independently of numerous provincial associations, of which there are only local records, there are to be found at present in the principal London commercial list,† the names of upwards of 280 Joint-Stock Companies, the aggregate subscribed capital of which exceeds the enormous sum of £167,000,000. Roughly stated, this capital is thus apportioned to the following objects,—Canals, £27,500,000; Docks, £2,500,000; Bridges, £2,000,000; Assurance Companies, £44,500,000; Joint-Stock Banks, £33,000,000; Gas-Light Companies, £4,000,000; Water Companies, 2,000,000; Mines, £10,000,000; Iron Railways, above £30,000,000; and Companies for miscellaneous objects, British and Colonial, £12,000,000.

The immense *preponderance of the commerce of England*, as compared with that of the other great divisions of the United Kingdom, has been shown in more than one instance in the preceding tables. In farther illustration of the relative amount of the business and the wealth of the different parts of the kingdom, we subjoin a statement of the amount of the gross receipt of four branches of the public revenue, collected

* The aggregate amount of notes in circulation in England and Wales, in September 1838, was as follows:—

Bank of England circulation,.....		£19,665,000
Joint-Stock Bank	ditto,.....	4,281,151
Private Bank	ditto,.....	7,083,811
Total,.....		£31,029,962

† Wetenhall's *Course of the Exchange, &c.*

in England, Scotland, and Ireland respectively, in the year ending 5th January 1838; also a statement of the revenue from the land and assessed taxes in Great Britain during the same year.

	Revenue of Excise.	*Revenue of Stamps.*	*Post-Office Revenue.*	*Revenue of Taxes.*
ENGLAND and WALES,.....	£11,033,050	£6,250,923	£1,979,913	£3,667,735
SCOTLAND, ...	2,426,992	529,528	221,059	227,607
IRELAND, ...	1,835,392	475,677*	261,296	. . . . .
TOTAL,.....	£15,295,434	£7,256,128	£2,462,268	£3,895,342

INCOME OF THE POPULATION. — Estimating the average annual income of each person in Great Britain at from £16 to £17, Mr. M'Culloch concludes that the total gross income of the population is at present from £290,000,000 to £310,000,000. The late Lord Liverpool estimated the same in 1822, at from £250,000,000 to £280,000,000.† The average annual income of each person in Ireland, is supposed by Mr. M'Culloch not to exceed £6.

Our limits preclude us from entering into details of the *condition of the working classes*, and the state of *pauperism* in England. It may be sufficient to remark, that pauperism was on the increase till 1818, in which year the enormous sum of £7,870,800 was expended for the relief the poor. In 1837 the amount so expended was £4,041,471, a decrease evidently showing an improvement in the condition of the mass of the people. The progress of *Savings Banks*, since their first insititution in 1817, also exhibits a pleasing proof of the same fact. In November 1837 there were 398 banks for savings in England, and 23 in Wales, in which the aggregate amount of deposits by individuals was £16,578,849, and by Friendly Societies and Charitable Institutions (in all 10,502 in number), £1,055,038; together £17,633,887. The total number of depositors was 547,910, and in 293,750 instances the sum invested by each individual averaged about £7. It is stated by Mr. Senior, on the authority of answers to inquiries addressed by the Poor-Law Commissioners to a large number of parishes in various counties in England, that a *labouring man's earnings* will, on an average, be £27 : 17 : 10 annually, and that with the addition of the earnings of his wife and four children, aged 14, 11, 8, and 5 respectively (the eldest a boy), the annual incomes of the family will be £41 : 17 : 8. In France the aggregate earnings of such a family would be 840 francs, or £33, 12*s.* per annum; in some other countries the amount would be much smaller.

INTERNAL COMMUNICATION. — The immense facilities of internal communication which England possesses, and which have so long excited the admiration of foreigners, naturally fall to be considered under the several heads of *Roads*, *Canals*, and *Railways*.

§ 1. *Roads.*

The roads of England and Wales are of two classes; namely, *turnpike roads*, kept up by the imposition of tolls, and *parish* or *cross-roads*, which are made and maintained by rates levied on the several parishes in which they are situate. The total length of the former at present exceeds 23,000 miles; that of the latter in 1818 was upwards of 95,000 miles. In 1835, the total income of the turnpike trusts in England was £1,701,483, and the total expenditure, £1,681,411. The debt previously incurred, and secured by mortgages of tolls, &c. &c. on the turnpike roads, amounted in 1835 to £8,022,848; at present it amounts nearly to £9,000,000.

The distribution of turnpike roads through the respective counties of England and Wales was in 1829 as follows: —

	Miles.
Bedfordshire, ...	238
Berkshire, ...	319
Buckinghamshire, . . .	165
Cambridgeshire, ...	278
Cheshire, ...	349
Cornwall, ...	318
Cumberland, ...	215
Derbyshire, ...	574
Devonshire, ...	782
Dorsetshire, ...	347
Durham, ...	359
Essex, ...	249
Gloucestershire, ...	840
Hampshire, ...	810
Herefordshire, ...	553
Hertfordshire, ...	170
Huntingdonshire, . . .	146
Kent, ...	586
Lancashire, ...	631
Leicestershire, ...	445
Lincolnshire, ...	538
Middlesex, ...	158
Monmouthshire, ...	315
Norfolk, ...	271
Northamptonshire, . . .	358
Northumberland, ...	479
Nottinghamshire, . . .	302
Oxfordshire, ...	342
Rutlandshire, ...	18
Shropshire, ...	988
Somersetshire, ...	746
Staffordshire, ...	630
Suffolk, ...	279
Surrey, ...	281
Sussex, ...	623
Warwickshire, ...	477
Westmorland, ...	284
Wiltshire, ...	768
Worcestershire, ...	565
Yorkshire, ...	1,448
Total, ENGLAND, . .	18,244

	Miles.
WALES.	
Anglesea, ...	25
Brecknockshire, ...	169
Cardiganshire, ...	250
Carmarthenshire, . . .	319
Carnarvonshire, ...	129
Denbighshire, ...	165
Flintshire, ...	85
Glamorganshire, ...	355
Merionethshire, ...	261
Montgomeryshire, . . .	450
Pembrokeshire, ...	173
Radnorshire, ...	250
Total, WALES, . . .	2,631
ENGLAND and WALES, .	20,875
SCOTLAND, ...	3,666
Total, GREAT BRITAIN, .	24,541

* In 1837.

† The gross amount of income in Great Britain, assessed in 1815 under the Property Tax Act, was £166,222,128; professional incomes or wages under £50 yearly were however exempted from this tax.

§ 2. *Canals.*

In England the artificial system of navigation has been in active operation, on a very extensive scale, for more than half a century. The first canal was that of *Sankey Brook*, which was completed in 1760; the *Duke of Bridgewater's Canal* was formed in 1761; and these were succeeded at various intervals by others. In addition to making canals, such of the rivers as are capable of improvement have been rendered navigable, so that there is now no spot south of Durham which is more than 15 miles distant from water-communication. The aggregate length of the canals of England exceeds 2,300 miles, to which we may add 1,800 miles of river navigation artificially improved, forming in all a magnificent system of inland water-communication, to which Holland alone, of all the European countries, can present a parallel. All the great rivers of England are connected with each other by means of canals; and of the latter, the most important stretch generally from east to west. In the northern part of the country, the great chain of inland navigation commences in the *Lancaster Canal*, in Lancashire and the south of Westmoreland. This canal extends from Kendal, by Lancaster and Preston, to Wigan, and it communicates with Liverpool by the *Leeds and Liverpool Canal*. From Liverpool the chain is continued in the river *Mersey*, the *Duke of Bridgewater's Canal*, and the *Trent and Mersey Canal*, or *Grand Trunk*. From the latter it stretches to the Thames by the united lines of the *Coventry* and *Oxford Canals*. To the south of the Thames, the *Wye Navigation*, extending to Guildford, connects it with the *Wye and Arun Canal*, and the latter with that of *Arundel and Portsmouth*, thus completing a line of inland navigation more than 600 miles in length, extending from within forty-five miles of the northern borders of England, to the coast of the Channel.

The following is an alphabetical list of the principal channels of inland navigation: —

Aberdare Canal—about 6¼ miles long. This is a branch of the Cardiff or Glamorgan canal, and terminates at Ynys Cynon, ⅜ of a mile from Aberdare.

Adur River, in Sussex—has been rendered navigable for 14 miles from the sea, to Binesbridge in West Grinstead.

Aire and Calder Navigation.—The river Aire, in Yorkshire, is navigable for sloops of sixty tons, for 40 miles up to Leeds, where the Leeds and Liverpool canal begins. The river Calder falls into the Aire, about 10 miles below Leeds, and is navigable about 10 miles to Wakefield, where the Calder and Hebble navigation commences.

Alford Canal—is to extend from Alford in Lincolnshire to the sea at Anderby, a distance of 6¼ miles.

Ancholm and Caistor Navigations—join the Humber above Hull; the former being 26, the latter, which joins it from the east, being 4 miles long.

Andover Canal—from Southampton water to near Andover, about 22⅔ miles long.

Arun River Navigation, in Sussex, 13 miles long, partly by the course of the river, and partly by cuts to Arundel haven. From this the river itself has been rendered navigable to Arundel port, making a total length of 26½ miles.

Ashby-de-la-Zouche Canal—passes by a very winding course northward for 26½ miles from the Coventry canal to Ashby.

Ashton and Oldham, or *Ashton-under-Lyne Canal*—branches off from the Rochdale canal at Manchester, and terminates in the Huddersfield canal at Duckenfield-bridge, a distance of 11 miles. It has several branches.

Avon River, Hampshire—was once made navigable for 36 miles, but the works have been allowed to go to ruin, and it is now navigable for only 2 miles from the sea.

Avon River, Warwickshire—navigable from Stratford to the Severn, at Tewksbury, a distance of 44 miles.

Avon River, Gloucestershire—navigable from Bath to King's Road, below Bristol, a distance of 26¾ miles, and forms the harbour of Bristol.

Axe River, Somersetshire—navigable for 9 miles from the sea.

Barnsley Canal—begins in the river Calder, a little below Wakefield-bridge, and terminates at Barnby basin, a distance of 15 miles.

Basingstoke Canal—commences at Westley on the Wey, about 2 miles from the Thames, and extends 37 miles, to Basingstoke.

Baybridge Canal, in Surrey—proceeds from Binesbridge, along the course of the Arun, to Baybridge, a distance of 3⅜ miles.

Birmingham and Fazeley Canal—extends from Birmingham to Fazeley, near Tamworth, a distance of 15 miles, with a fall of 248 feet. The remaining 5½ miles to Whittington brook are level.

Birmingham (Old) Canal—proceeds from Farmer's-bridge in Birmingham, to the Staffordshire and Worcestershire canal at Autherley. This canal communicates with the Worcester and Birmingham canal at Birmingham, with the Dudley canal near Tipton-green, and with the Wyrley and Essington canal near Wolverhampton. By means of its canals, Birmingham communicates with the most important towns in England and Wales.

Birmingham and Liverpool Junction Canal—extends for 39 miles from the Staffordshire and Worcestershire canal near Autherley, to the Ellesmere and Chester canal near Dorford-hall.

Blyth River, Suffolk—navigable to Halesworth Bridge, about 9 miles from the sea.

Bourn-Eau-River—navigable from the river Glen (Norfolk) for 3¾ miles, to the town of Bourn.

Bradford Canal—extends from the Leeds and Liverpool canal to Bradford, a distance of 3 miles.

Brecknock and Abergavenny Canal, in South Wales—33 miles long.

Bridgewater's Canal (Duke of), Lancashire and Cheshire—extends from Manchester to Runcorn Gap, in the tideway of the Mersey, a distance of 27 miles. This canal was formed in 1761, and in 1795 it was extended to the town of Leigh, with a branch to Chatsmoss.

Bridgewater and Taunton Canal—in Somersetshire. Length 42½ miles.

Britton Canal—extends from the River Neath to Swansea harbour, a distance of 4½ miles.

Bude and Launceston Canal—extends by a circuitous course from Bude haven in Cornwall, to Thornbury, a distance of 21⅛ miles. A branch, 19 miles long, passes along the west bank of the Tamar, to near Launceston.

Bure River, Norfolk—navigable from Aylsham to near Yarmouth, a distance of 40 miles. Of its affluents, the *Ant* is navigable for 8 miles, and the *Thurn* for 7 miles.

Bury River, between Caermarthenshire and Glamorganshire—navigable for about 12 miles from the sea, to the mouth of the river Loughor, which continues the navigation 2 miles farther.

Bute Ship Canal—extends from Cardiff harbour to the town of Cardiff.

Calder and Hebble Navigation—extends from the Aire and Calder navigation near Wakefield, to Sowerby Bridge wharf, near Halifax, a distance of 22 miles.

Cam, or *Granta River*—navigable 14 miles from Cambridge, to its mouth, in the Great Ouse at Harrimere.

Camel River, Cornwall—navigable for 8½ miles.

Canterbury Navigation, or *River Stour*—partly natural, partly artificial, extends from Canterbury to Sandwich, a distance of 21 miles.

Carlisle Canal, 11½ miles long—extends from Carlisle to the Solway Firth, near Bowness.

Chelmer and Blackwater Navigation, Essex—extends from the basin at Chelmsford, to the tideway at Collier's reach, a distance of 14 miles, partly by the course of the river Chelmer, and partly by cuts. The length of the Blackwater to the sea is 11 miles.

Chesterfield Canal—extends from the Tees at Stockwith, to Chesterfield, a distance of 46 miles, with a tunnel of 2850 yards at its summit-level.

Colne River—navigable from Hythe, near Colchester, to the sea.

Conway River, Denbighshire—navigable for 13½ miles from the sea.

Coombehill Canal—extends from the village of this name, in Gloucestershire, to the Severn, a distance of 3½ miles.

Coventry Canal—extends from the Trent and Mersey, or Grand Trunk canal on Fradley Heath, to Coventry, a distauce of 37¾ miles.

Cromford Canal, 18 miles in length—extends from the Nottingham canal, to Cromford, near Matlock in Derbyshire. It has several tunnels; one of them, at Ripley, is 2966 yards long.

Crouch River, Essex—navigable for 16 miles.

Croydon Canal—extends 9½ miles from the Thames at Deptford to Croydon.

Darent River—navigable about 4 miles in the tideway, from Dartford to Longreach on the Thames.

Dart River, Devonshire—navigable about 12½ miles from the sea.

Dearne and Dove Canal—extends 9¾ miles from the Don or Dunn river, between Swinton and Mexborough to aqueduct of the Barnsley canal over the river Dearne.

Deben River, Suffolk—navigable about 9½ miles from the sea.

Dee River, Cheshire—navigable for vessels of 300 tons, by a new channel of 8 miles long, cut from Chester to the estuary, which extends farther to the Irish Sea, a distance of 15 miles.

Derby Canal—extends from the Trent, near Swarkston, to Little Eaton, a distance of about 9 miles. From the east bank of the Derwent, a branch extends 8½ miles to the Erewash canal.

Derwent River, Derbyshire—navigable from Derby to the Trent at Wilden Ferry, a distance of 13 miles.

Derwent River, Yorkshire—navigable from Yedingham Bridge to Barmby, on the Ouse, a distance of 49½ miles.

Donnington-wood Canal—commences in the Shropshire canal, and runs north-east for 7 miles, to Pave Lane wharf, near Newport.

Driffield Navigation, 11 miles in length—extends from the river Hall, Yorkshire, to Great Driffield.

Droitwich Canal—extends 5¾ miles from Droitwich to Hawford, on the Severn.

Dudley Canal—extends from the Worcester and Birmingham canal, near Selby-oak, in Worcestershire, to the Old Birmingham canal, near Tipton, a distance of 13 miles. It has three tunnels:—one at Dudley, 2926 yards; one at Lapal, 3776 yards; and one at Grotsy-hill, 623 yards.

Dun River Navigation—partly natural, and partly artificial, extends about 39 miles from the Ouse at Goolebridge to Tinsley, near Sheffield.

Eden River, Cumberland—has been made navigable for 10½ miles, from the Solway Firth, to Carlisle Bridge.

Ellesmere and Chester Canal—extends from the Mersey, 10 miles SE. of Liverpool, by Chester, to the Montgomeryshire canal, a distance of 61 miles, passing the river Dee by the famous iron-aqueduct at Pont-y-Cysylte. The length of the main line is 61 miles; it has, besides, several collateral branches, in all 109 miles.

English and Bristol Channels Ship Canal—was intended to run from Scton Bay, on the English Channel, to Bridgewater Bay, on the Bristol Channel, a distance of 41½ miles; but has not been carried into effect.

Erewash Canal—extends from the Cromford canal, near Langley Bridge, to the Trent, near Sawley Ferry, being 11¾ miles long. The *Nut-brook Canal* proceeds from the middle of this. And farther down it receives a branch of the Derby canal.

Exe (Estuary of the), Devonshire—navigable from Exeter to Topsham, a little above which a canal runs up the west side of the river for fully 3 miles.

Foss Navigation, in the North Riding of Yorkshire, follows the course of the river Foss for about 12½ miles to the Ouse at York.

Foss-dike Navigation—extends from the Trent at Torksey, to the river Witham, a distance of 11 miles. This canal is supposed to have been first formed by the Romans.

Gippen, or *Gipping River*, Suffolk—has been made navigable for 16 miles, from near Stowmarket, to the tideway of the Orwell.

Glamorganshire, or *Cardiff Canal*—commences near the mouth of the river Taff, and extends to Merthyr Tydvil, the length being about 25 miles, with a rise of 611 feet.

Glastonbury Navigation—extends partly along the river Brue, and partly by a canal, from the Bristol Channel to Glastonbury, for 14¼ miles.

Gloucester and Berkley Ship Canal—begins in the Severn at Sharpness Point, about 3 miles north of Berkley, and terminates at Gloucester. The distance by the canal is only 16½ miles, while by the course of the Severn it is 28 miles, with a difficult and often dangerous navigation.

Grand Junction Canal—proceeds from the Thames at Brentford, to the Oxford canal, the length being 90½ miles. A branch extends for 13½ miles to Paddington. Other branches connect it with Wendover, Aylesbury, Buckingham, and the Nen, near Northampton.

Grand Surrey Canal—4 miles and 2 chains long, connecting the Thames, near the Tunnel, with the districts of Walworth and Camberwell.

Grand Union Canal—connects the Leicester Union canal, near Foxton, with the Grand Junction canal, at Long-Buckley, and is 45 miles long.

Grand Western Canal—Somersetshire and Devonshire—connects the Bristol and English Channels by a line of canal, commencing at the river Tene or Tone near Taunton, and continued to the river Exe at Tiverton. Its length is 35 miles.

Grantham Canal—proceeds from Grantham to the Trent, a distance of 33 miles. A branch of 3½ miles goes to Bingham.

Gresley Canal—forms a short connecting portion between, or in the line of the Newcastle-under-Line canal, and the Newcastle under-Line Junction canal.

Hartlepool Ship Canal, Durham—connects Hartlepool harbour with the sea. It is 300 yards long.

Hereford and Gloucester Canal—extends from the Severn at Gloucester to Hereford. The total length is 35½ miles, with three tunnels of 2192, 1320, and 440 yards respectively.

Hertford Union Canal—a cut of 1 mile in length, to connect the Hackney cut of the river Lea navigation with the Regent's canal. It is also called the *Lea-Union*, and *Sir George Ducket's Canal*.

Horncastle Navigation—extends from the Old Witham river, near Tattershall, Lincolnshire, to Horncastle. It is 11 miles long.

Huddersfield Canal—commences at Huddersfield, and terminates in Manchester, Ashton, and Oldham canal, near Duckenfield-bridge. It is raised to the height of 656 feet, passing over the highest summit-level in the kingdom, and passes through the Standedge tunnel, of 5451 yards long, which is the largest in Britain. Length 19¾ miles.

Itchin Navigation, Hampshire—follows the course of the Itchin from near Winchester to Southampton water, a distance of 14 miles.

Ivel River, Bedfordshire—has been made navigable for 5⅝ miles, from the Ouse, up to Biggleswade.

Ivelchester and Langport Canal, Somersetshire—nearly 7 miles long, and extends from the river Parrot to Ivelchester or Ilchester.

Kennet and Avon Canal—extends from the Kennet at Newbury, Berkshire, to the Avon, below Bath, a distance of 57 miles. *The Kennet River* itself has been made navigable for 20 miles, from the entrance of the canal, downward to the Thames.

Kensington Canal, 3000 yards long—extends from the Thames northward to Kensington.

Lancaster Canal—extends from Berkhill, near Wigan, to Kirkby-Kendal. The length is about 73 miles, and it has a magnificent aqueduct over the Lune, near Lancaster.

Larke, or *Burn River*, in Suffolk and Cambridgeshire—navigable for 14 miles, to Bury St. Edmunds.

Lea River Navigation—commences at Hertford, and terminates at the Thames at Bow creek; the length being about 26 miles.

Leeds and Liverpool Canal—extends from Leeds to Liverpool, a distance of 127¼ miles. At Foulridge is a great tunnel 1640 yards long.

Leicester Navigation—14 miles long from the Loughborough canal to the *Leicester and Northamptonshire Union Canal*. The latter extends from this junction to the Grand Union canal at Gumley Bridge, a distance of 17 miles.

Leominster Canal—extends from Kingston in Herefordshire, for 46 miles to Stourport, where it joins the Severn and the Stafford and Worcester canal.

Leven Canal—a cut of 3 miles from the village of Leven to the Driffield, or Hull river navigation.

Liskeard and Looe Canal, in Cornwall—nearly 6 miles long.

Louth Canal—runs from Louth to Titney, at the mouth of the Humber, a distance of 14 miles.

Loyne, or *Lune River*—navigable about 7 miles from Lancaster Bridge to the sea.

Macclesfield Canal—extends from the Peak Forest canal, to the Trent and Mersey canal, a distance of 29½ miles.

Manchester, Bolton, and Bury Canal—extends from the Irwell at Manchester, to Bolton and Bury.

Market-Weighton Canal—extends from that town to the Humber, a distance of 11 miles.

Medway River—begins to be navigable for barges 6 miles above Tunbridge, and about 45 from Sheerness. Below Rochester Bridge the river is in some places of great width, and so deep, as to float the largest vessels at low water. A little below Rochester Bridge, it is joined by the Thames and Medway canal, and near its mouth by the East Swale, a tide-passage, along the south side of Sheppey isle.

Melton-Mowbray Navigation—Leicestershire—connects the Oakham canal with the Leicester Navigation.

Mersey and Irwell Navigation—commences in the estuary of the Mersey, at Runcorn Gap, and terminates at the bridge between Manchester and Salford. It consists of these rivers improved by locks, weirs, and side-cuts, and is navigable for upwards of 50 miles.

Monmouthshire Canal—extends from the river Usk, below Newport, to Pont-newynydd, 17¾ miles.

Montgomeryshire Canal—extends from Porty-wain limeworks, to the Severn at Newton, 27 miles.

Narr, or *Lynn River*—navigable from the Ouse at King's Lynn, to Castle Acre in Norfolk, a distance of about 15 miles.

Neath Canal, Glamorganshire—14 miles long.

Nen, or *Nyne River*—navigable from the sea below Wisbeach, to Northampton, a course of 99 miles, partly by the natural course of the river, and partly by artificial lines. It is connected with a great number of navigable cuts intersecting and crossing in all directions through the fens.

Newcastle-under-Line Canal—a short branch of the Trent and Mersey canal.

Newport-Pagnell Canal—a branch of 1½ miles long from that town to the Grand Junction canal.

North Walsham and Dilham Canal, in Norfolk—has an extent of 7 miles.

Norwich and Lowestoff Navigation—extends between these towns, a distance of 30 miles.

Nottingham Canal—has a course of 15 miles, from the Trent, Langley Bridge.

Nutbrook and Shipley Canal—is a branch of the Erewash canal, and is 4½ miles long.

Oakham Canal—extends from Oakham, in Rutlandshire, to Melton-Mowbray, a distance of 15 miles.

Ouse River, Sussex—naturally navigable for 9 miles from the sea. The navigation has been extended by artificial means, 22 miles farther, to Hammer Bridge.

Ouse River, Yorkshire—navigable for vessels of 150 or 160 tons, from its junction with the Trent, up to Armyn, a distance of 15 miles, and for smaller masted vessels, 25 miles farther up to York.

Ouse River Navigation (Bedford Level)—navigable partly by the natural channel, and partly by cuts from the sea to Bedford, a distance of 84 miles. It is connected with a great number of navigable branches in the fen districts.

Oxford Canal—extends from the Coventry canal at Longford, to the Thames at Oxford, a distance of about 91 miles.

Peak Forest Canal—commences at Duckenfield, and passes south-east, 15 miles to Bugsworth.

Penclawdd Canal, Glamorganshire—above 3½ miles long.

Pocklington Canal, Yorkshire—8½ miles long.

Portsmouth and Arundel Canal—connects these places. Length 13 miles.

Ramsden's Canal—a short connecting link of 3¾ miles long between the Huddersfield canal at Huddersfield, and the Calder and Hebble navigation, near Cooper's Bridge.

Regent's Canal—extends from the Paddington basin of the Grand Junction canal, to the Thames at Limehouse, along the north side of London, a distance of 8½ miles.

Ribble River, Lancashire—has been rendered navigable for 11 miles up from the Irish Sea.

Rochdale Canal—extends from the Bridgewater canal at Castlefield, Manchester, to the Calder navigation at Sowerby Bridge wharf, a distance of 31½ miles.

Rother River Navigation, Sussex—extends 11 miles from the sea.

Royal Military Canal—extends from Hythe to near Winchelsea, 30 miles, in Kent and Sussex.

St. Columb Canal—a cut of 6 miles, in Cornwall.

Salisbury and Southampton Canal, Hampshire—incomplete.

Sankey Brook Navigation—the oldest in England, extends 12 miles from the Mersey, to St. Helen's, Lancashire.

Severn River—navigable for 178 miles, from Welshpool to the Bristol Channel, and connected with a great number of canals.

Sheffield Canal—only 4 miles long, connects that town with the River Don navigation.
Shrewsbury Canal—extends from Rockwardine wood, at the north end of the Shropshire canal to Shrewsbury, a distance of about 17½ miles.
Shropshire Canal—extends 7½ miles from the Severn, at Coalport, to the Donnington-wood canal.
Sleaford Navigation, Lincolnshire—extends through the fens for 13½ miles.
Soar River Navigation—extends 7 miles, from the Trent to Loughborough in Leicestershire.
Somersetshire Coal Canal—a branch of the Kennet and Avon canal, has a length of 10 miles.
Staffordshire and Worcestershire Canal—extends from the Severn at Stourport, to the Trent and Mersey canal near Haywood in Staffordshire, a distance of 46½ miles.
Stainforth and Keadley Canal—extends from the river Don, near Stamforth, Yorkshire, to the Trent at Keadby, Lincolnshire, a distance of 15 miles.
Stort River—has been made navigable for 10 miles, in Hertfordshire and Essex, from the Newbridge, Bishop-Stortford, to the river Lea at Rye near Hoddesden.
Stourbridge Canal, Worcestershire—has a length of 5 miles.
Stour River, between Suffolk and Essex—has been rendered navigable for 19 miles, from Sudbury to Manningtree; below which to Harwich it is a wide estuary.
Stratford-upon-Avon Canal—extends from King's-Norton, near Birmingham, to Stratford, a distance of 23½ miles.
Stroudwater Navigation, Gloucestershire—8 miles long.
Swansea Canal, Glamorganshire—extends inland from Swansea harbour for 17 miles.
Tamer Manure Navigation. The Tamer river has been made navigable up to Boat-pool, whence a canal has been continued for about 22 miles, to Tamerton Bridge.
Tavistock Canal—extends from the tideway of the Tamer, 4½ miles, to Tavistock.
Tees Navigation,—partly natural, partly artificial, extends inland about 12 miles from the sea.
Thames River—begins to be navigable at Lechlade, about 146½ miles above London Bridge, and where the Thames and Severn canal locks into it. From London downwards, it is navigable for large ships, and, gradually widening, at Sheerness it becomes a large estuary 5 miles broad. From the great depth of water in the Thames, London enjoys, as a shipping port, peculiar advantages. Even at ebb-tide, there is 12 or 13 feet of water in the fair-way of the river above Greenwich; and the mean range of the tides at London Bridge is about 17 feet, while the range of the highest spring-tides is about 22. Up to Woolwich, the river is navigable for ships of any burden; to Blackwall for those of 1400 tons; and to St. Catherine's docks for vessels of 800 tons; but, owing to the numerous, and sometimes opposite directions which the river takes, the change of its currents, according to the state of the tide, and the varying shoals which exist in many parts of it, the navigation is intricate and difficult. It is accordingly superintended by a distinct class of people, called the river pilots, who conduct vessels to and from Gravesend, below which they are intrusted to the sea pilots. The estuary of the Thames is very much incommoded by sandbanks, among which are a number of channels passable by ships, and marked out by buoys and lights.
Thames and Medway Canal—extends 7½ miles from Gravesend to Chatham. It passes through a tunnel of 2½ miles.
Thames and Severn Canal—extends from Lechlade on the Thames, to the Stroudwater canal near Stroud, a distance of 30 miles. It has a tunnel at Sapperton, which is 4300 yards long.
Tone and Parret Navigation, Somersetshire—about 27 miles long, commencing at Start Point, on the Bristol Channel.
Trent River—navigable from Burton to the Humber, a distance of about 117 miles.
Trent and Mersey Canal, sometimes called *The Grand Trunk Canal*, from it passing through the central parts of the kingdom, and connecting the Trent, Mersey, and Severn—extends from Wilden Ferry, on the Trent, to Preston brook, on the Duke of Bridgewater's canal. The length is about 93 miles. At Harecastle, Staffordshire, it passes through a tunnel of 2880 yards.
Tyne River, Northumberland, becomes navigable at Newburn, 5 miles above Newcastle; and ships of 400 tons burden come up to the bridge of that town. From Newburn to the lighthouse at Shields, the distance is 17 miles. At its mouth, the river forms one of the most convenient tidal harbours in the world, affording ample accommodation for 2000 sail.
Ulverston Ship-canal, Lancashire—about 1½ mile long.
Ure River Navigation, or *Ripon Canal*—extends from the Ouze to Ripon. Length about 7½ miles.
Warwick and Birmingham Canal—connects these towns, and has a course of 22½ miles.
Warwick and Napton Canal—extends 14 miles.
Waveney River, between Suffolk and Norfolk—is navigable for about 23 miles from the sea, to Bungay.
Wear River—navigable from the sea to Durham, a distance of about 18 miles.
Weaver River Navigation, Lancashire—extends 23¾ miles.
Welland River—has been made navigable from its mouth, up to Stamford, Lincolnshire.
Wey River—has been made navigable from the Thames to Godalming, Surrey, about 20½ miles.
Wey and Arun Junction Canal—extends from the Wey, near Shalford powder-mills, to Newbridge, on the Arun navigation at Newbridge, a distance of 18 miles.
Wilts and Berks Canal—extends 52 miles from Semington, on the Kennet and Avon canal, to the Thames at Abingdon, with several branches to other places.
Wisbeach Canal—a level cut of 6 miles from the river Nen at Wisbeach, to the old river at Outwell.
Witham River—navigable from its mouth, to the Foss Dyke at Lincoln, a distance of 38 miles.
Worcester and Birmingham Canal—extends from Birmingham to the Severn, a little below Worcester. The length is 29 miles.
Wreak and Eye Rivers, or *Leicester and Melton-Mowbray Navigation*—extends along these rivers about 11 miles—(see *Melton-Mowbray Navigation.)*
Wye and Lugg Rivers—navigable 99½ miles from the Severn.
Wyrley and Essington Canal—extends from the Birmingham canal near Wolverhampton, to the Coventry canal near Huddersford, a distance of 24 miles.
Yare River—navigable from Norwich to Yarmouth, by a crooked course of 28 miles.

§ 3. *Railways.*

Railways, it is believed, were first introduced into Britain in the beginning of the seventeenth century, when, under the name of *tram-roads*, they were used at some of the Newcastle collieries. For a long period these modes of communication remained more or less rude in point of construction, and limited as to application, but of late years they have presented the most perfect specimens of engineering skill, and have been established on a most gigantic scale of magnitude. The Surrey Iron Railway, to authorize the construction of which an Act of Parliament was obtained in 1801, may be considered the earliest of the public railways of Britain. It was immediately succeeded by several others; yet for an after period of more than twenty

years, undertakings of that nature took little hold of public attention, till the splendid success which attended the introduction of locomotive steam-engines on the Stockton and Darlington, and Liverpool and Manchester lines, brought them under general notice. The progress of public railways throughout the United Kingdom, more especially within the last few years, has been enormous. The following table shews the amount of capital authorized by Parliament to be raised for this purpose since 1840:—

Year.	Amount of Capital.
1840	L.4000,000
1841	3500,000
1842	6000,000
1843	4500,000
1844	18,000,000
1845	59,000,000
1846	124,000 000
1847	38,000,000
1848	
	£500,000,000

The following table shews the names of the Railway Companies existing in the United Kingdom in 1848, with the number of shares into which their capitals are divided, and the amount of each share:—

No. of Shares.	NAME OF COMPANY.	*Amount of Shares.*	*No. of Shares.*	NAME OF COMPANY.	*Amount of Shares.*
16,600	Aberdeen	L.50	26,000	Edinburgh and Northern, New	L.25
95,000	Ambergate, Nott, Boston, and East Junction	20	29,000	Do. Newport	15
6,900	Ayrshire and Galloway	14½	26,000	Do. do. New	15
10,000	Belfast and County Down	50	52,000	Exeter, Yeovil, and Dorchester	25
50,000	Birmingham and Oxford Junction	20	20,000	Do. New	25
35,000	Birmingham, Wolver., and Dudley	20	52,000	Glasgow, Dumfries, and Carlisle,	8½
55,500	Birmingham, Wolver., & Stour Vall.	13.14	L.625,000	Glasgow, Paisley, Kilmar., & Ayr	Stock
45,000	Birkenhead, Lancashire, & Cheshire Junction	31	15,625	Do. New	40
12,600	Boston, Stamford, & Birmingham	20	L.56,250	Do. Preference Consolidated	Stock
15,000	Bristol and Exeter	100	224,000	Great Northern	25
15,000	Do. Thirds	33⅓	40,000	Do. London and York Extension	25
45,428	Buckinghamshire	17½	50,000	Great Southern & West. (Ireland)	50
42,000	Caledonian	50	6,690	Great North of England	100
51,000	Do. ½ shares,	25	7,500	Do. New L.40	40
9,000	Do. Clydesdale Junction	50	10,000	Do. New L.30	30
42,000	Chester and Holyhead	50	10,000	Do. New L.15	15
42,000	Do. Preference	15	25,000	Great Western	100
30,000	Direct London and Portsmouth	50	28,000	Do. ½ Shares	50
18,671	Dublin and Belfast Junction	25	93,000	Do. ¼ Shares	25
15,000	Dundalk and Enniskillen	30	37,500	Do. Fifths	20
22,800	East Anglian, L.25, L.& E.& L.& D.	25	69,700	Do. New L.17	17
10,800	Do. do. L.18, E. and H.	18	23.125	Huddersfield and Manchester	30
11,485	Do. do. L.3, 10s.	3½	18,900	Do. do. Thirds	10
258,986	Eastern Counties	Stock	8,000	Hull and Selby	50
16,250	Do. do. B.	Stock	8,000	Do. ½ Shares	25
144,000	Do. Extension, 5 per cent. No. 1	6.13.4	8,000	Do. ¼ Shares	12½
144,000	Do. do. No. 2	6.13.4	15,920	Ipswich and Bury St Edmunds	25
14,400	Do. Northern and Eastern	50	15,920	Do. do. and Norwich	25
12,208	Do. ½ Shares	12½	22,000	Do. do. Ex. Scrip., late Camb. and Ely	25
6,156	Do. New	50	18,000	Lancaster and Carlisle	50
4,000	Eastern Union	50	18,000	Do. Thirds	16⅔
5,600	Do. ½ Shares,	12½	6,201	Lancashire and Yorkshire	100
5,000	Do. Thirds	6.13.4	13,000	Do. do.	100
.....	Do. Guaranteed 6 per cent. (300,000*l.*)	20	13,000	Do. ½ Shares	50
.....	Do. do.	20	19,500	Do. ¼ Shares	25
35,435	East Lancashire	25	126,819	Do. Fifths	20
48,165	Do. New	25	24,336	Do. Sixteenths	6¼
34,720	Do. New ¼ Shares	6½	48,444	Do. Thirds (Reg.)	32
24,000	East Lincolnshire	25	20,000	Do. Liverpool and Bury	50
18,000	Edinburgh and Glasgow	Stock	10,640	Do. (Huddersfield and Sheffield	50
28,125	Do. ½ Shares	25	7,300	Do. Wakefield, Pontefr., & Goole	50
22,500	Edinburgh & Glasgow, ¼ Shares	12½	100,000	Do. West Riding Union	20
26,000	Edinburgh and Northern	25	14,520	Do. Preston and Wyre	25
			16,720	Do. do. ½ Shares	12½
			18,000	Leeds and Bradford	50

No. of Shares.	NAME OF COMPANY.	*Amount of Shares.*
10,000	Leeds, Dewsbury, and Manchester	L.50
4,000	Do. ½ Shares	25
2,400	Do. (Blue) Scrip	25
10,186	Do. (Green) Scrip	25
9,414	Do. (Pink) Scrip	25
17,800	Leeds and Thirsk	50
7,420	Do. do. New	50
27,000	Do. do. Preference, 6 per cent.	35
8,896	Liverpool, Crosby, and Southport	20
70,000	Lvrpl., Manchstr., & Newcast. Jn.	20
72,000	London and Blackwall	13.6.8
16,000	Do. New, No. 2	6.13.4
8,000	Do. Extension	25
4,019,130	London, Brighton, & South Coast	Stock
9,734	Do. Consolidated Eighths	50
44,294	Do. Guar. 5 pr ct., la. Crydn. Thds	9
3,903	Do. Prfrntial Convrt. 5 pr ct. 1848	50
1,640	Do. do. do. 1852	50
43,000	London and Greenwich	12.15.4
11,136	Do. Preference or Privilege	18.17.2
13,456,457	London and North-Western	Stock
55,000	Do. Quarters L. & B.	25
168,380	Do. do. New	25
66,879	Do. Fifths	20
12,090	Do. L.40 Shares L. & M.	40
30,000	Do. L.10 Shares M. & B. A.	10
60,000	Do. L.10 Shares M. & B. B.	10
70,000	Do. L.10 Shares M. & B. C.	10
2,584,100	London and South-Western	Stock
46,500	Do. New L.50	50
6,000	Do. New L.40	40
9,266	Do. Tenths (Consolidated)	50
1,200	Do. Tenths do.	40
120,560	Do. Thirds	16.13.4
31,168	London, Salisbury, and Yeovil	50
10,000	Londonderry and Coleraine	50
10,000	Londonderry and Enniskillen	50
82,500	Manchester, Buxton, and Matlock	20
7,000	Manchester, Sheffield, & Lincolnsh.	100
18,000	Do. ¼ Shares, No. 1	25
10,640	Do. ¼ Shares, No. 2	25
41,200	Do. ⅛ Shares, No. 3	12½
87,200	Do. New L.10 Preference	10
12,000	Do. Great Grimsby and Sheffield	50
32,750	Do. do. do.	20
16,000	Do. do. do.	12½
38,000	Do. Sheffield and Lincolnshire	25
16,800	Do. Grimbsby Dock	25
43,210	Do. Manchester & Lincoln Un.	8.2.0
75,000	Manchester and Southampton	...
L.6,175,053	Midland	Stock
L.25,000	Do. Consolidated Preference	Stock
53,293	Do. L.40 Shares	40
77,323	Do. L.50 Shares	50
L.978,533	Do. Birmingham and Derby	Stock
1,187,125	Do. Consol. Bris. & Birm. 6 pr ct.	Stock
6,639	Do. Bristol and Gloucester	50
7,539	Do. do.	37¼
140,000	Do. Leistr. & Swannigtn. (8 p ct. gua.)	Stock
20,000	Midland Great Western (Ireland)	50
6,000	Newcastle and Carlisle	100
3,600	Do. ¼ Shares	25
14,000	Newmarket	25
28,000	Do. Extension Scrip	25
29,320	Newport, Abergavenny, & Hereford	25
18,000	Newry and Enniskillen	50
5,000	Newry, Warrenpoint, & Rosstrevor.	L.20
L.866,250	Norfolk	Stock
9,850	Do. New L.20	20
15,000	Do. Extension 5 per cent.	20
21,000	Do. Guaranteed 5½ per cent.	5
6,000	Do. Scrip 1847, North of Norfolk	20
20,000	Do. do. do. Wavenney Valley	20
60,000	Northern Counties Union	50
32,000	North British	25
32,000	Do. ½ Shares	12½
96,000	Do. ¼ Shares	6¼
96,000	Do. Extension	6¼
78,400	Do. Thirds	8.6.8
5,000	North and South Western	20
168,500	North Staffordshire	20
11,960	North Wales	25
55,000	North-Western	20
30,000	Oxford, Worcester, & Wolverhampton	50
40,000	Reading, Guildford, and Reigate	15
32,000	Royston and Hitchin	8.6.8
40,800	Scottish Central	25
12,000	Scottish Midland	25
12,000	Do. New	25
14,000	Sheffield, Rotherham, and Goole	25
52,000	Shrewsbury & Birmingham, Class A	15.7.9
52,000	Do. do. Class B	9.12.3
6,000	Shrewsbury & Chester (Nor. W. Min.)	20
15,000	Do. Halves do.	10
20,500	Do. Oswestry	20
27,600	Do. (New)	10
17,500	Do. 8 per Cent. Preference	10
40,000	Shrewsbury and Hereford	20
165,000	Shropshire Union	20
20,000	South Devon	50
20,000	Do. Preference	25
78,750	South Staffordshire	12
56,000	South-Eastern and Dover	33.2.4
28,000	Do. do. do.....No. 1	32
42,000	Do. do. do.....No. 2	33⅓
31,500	Do. do. do.....No. 3	30
285,000	Do. do. do...Thirds No. 4	10
56,000	South Wales	50
37,500	South Yorkshire, Doncaster, & Goole	20
20,000	Swans, & Loughor & Camerons St. Co.	10
26,650	Taw Vale Extension	20
6,700	Thames Haven Dock and Railway	50
27,500	Vale of Neath	20
12,500	Waterford and Kilkenny	20
15,000	Waterford and Limerick	50
100,000	Waterford, Wexford, Wicklow, & Dub.	20
16,065	West Cornwall	20
5,100	West London	20
3,200	Do. do. 1st Class	20
760	Do. do. 2d Class	20
17,500	Whitehaven and Furness	20
50,000	Windsor, Staines, & South Western	16
30,000	Wilts, Somerset, and Weymouth	50
L.1,050,000	York, Newcastle, and Berwick	Stock
56,000	Do. Original New and Berwick	25
64,000	Do. Extension No. 1 (York & New)	25
62,000	Do. do. No. 2, New and Berwick	25
150,000	Do. G.N.E. Purchase or Prefer.	25
L.1,897,000	York and North Midland	Stock
62,950	Do. Preference	25
50,000	Do. East and West Riding Extens.	25

ADMINISTRATIVE AND ANCIENT DIVISIONS.—England is divided into forty, and Wales into twelve *shires* or *counties*, fifty-one of which are distributed or arranged into seven *circuits;* so named, as each of the seven included districts is visited periodically by two of the supreme judges, for the purpose of trying both civil and criminal causes at the assizes. As indicated in the following table, most of the counties are divided into *hundreds;* but the division of Northumberland, Cumberland,

Westmoreland, Durham, and Lancashire, is into *wards*. Yorkshire is divided into three *ridings*, which are subdivided into *wapentakes*. The divisions of Kent are termed *lathes*, and those of Sussex *rapes*, both of these being subdivided into *hundreds*. These divisions and subdivisions are further divided into *parishes*, of which there are 8,511 in England, and 869 in Wales. As Middlesex is the seat of the supreme courts, it is not included in any of the circuits.

HOME CIRCUIT.

Counties. *Hundreds, Wards, Wapentakes, &c.*

ESSEX.—Barstable, Becontree, Chafford, Chelmsford, Clavering, Dengie, Dunmow, Freshwell, Harlow, Hinkford, Lexden, Ongar, Rochford, Tendring, Hurstable, Uttlesford, Waltham, Winstree, Witham, and Havering liberty. *Parishes*, 405.

HERTFORD.—Braughin, Broadwater, Cashio, Dacorum, Edwinstree, Hertford, Hitchin and Firton, Odsey. *Parishes*, 135.

KENT.—1. *Sutton-at-hone lathe* contains the hundreds of Axton Dartford and Wilmington, Blackheath, Bromley and Beckenham, Ruxsley, Codsheath, Somerden, Westerham, and Lessness. 2. *Aylesford lathe*—Toltingtrough, Shamwell, Hoo, Rochester city, Chatham and Gillingham, Wrotham, Larksfield, Maidstone, Eyehorne, Littlefield, Twyford, Washlingstone, Brenchly and Horsemonden, Tunbridge. 3. *Scray lathe*—Milton, Teynham, Faversham, Boughton-under-blean, Felborough, Calchill, Wye, Chart and Longbridge, Blackbourne, Tenterden, Barklay, Cranbrook, Marden, East Barnfield, Rolvenden, Selbrightenden, Barony of Bircholt, and Isle of Sheppey. 4. *St. Augustine lathe*—Whitstable, Blean Gate, Ringslaw or Isle of Thanet, Wingham, Preston, Downhamford, Westgate, Bridge and Petham, Kinghamford, Eastry, Cornilo, Bewsborough. 5. *Shepway lathe*—Stouting, Loningborough, Folkstone, Hayne, Hythe, Street, Newchurch, Ham, Aloesbridge, Worth, St. Martin Pountney, Langport, Oxney isle, and Franchise of Bircholt. *Parishes*, 414.

SURREY.—Brixton, Wallington, Kingston, Elmbridge, Godley, Woking, Effingham, Copthorne, Tandridge, Reigate, Wotton, Blackheath, Godalming, Farnham. *Parishes*, 140.

SUSSEX.—1. *Chichester rape*—Dumpford, Eastbourne, Westbourne and Singleton, Bosham, Manhood, Box and Stockbridge, Aldwick. 2. *Arundel rape*—Rotherbridge, West Easwrith, Bury, Arundel, Avisford, Poling. 3. *Bramber rape*—Singleeross, Horsham borough, West Grinstead, Windham and Ewhurst, East Easwrith, Tipnook, Steyning, Burbeach, Fishergate, Brightford, Tarring, Patching. 4. *Lewes rape*—Buttinghill, Street, Barcomb, Poynings, Fishergate, Preston, Whalesbone, Dean, Younsmere, Swanborough, Lewes, Holmstrow. 5. *Pevensey rape*—East Grinstead, Hartfield, Rotherfield, Loxfield-Pelham, Burley Arches, Rushmonden, Loxfield-Dorset; Ringmer, Shiplake, Dill, Totmore, Danchill-Horsted, Aleistone, Bishopstone, Flexborough, Longbridge, Lowey of Pevensey, Willingden, Eastbourne. 6. *Hastings rape*—Shoyswell, Henhurst, Hawkesborough, Netherfield, Foxcarle, Ninfield, Boxhill, Battle, Baldstow, Guestling, Gostrow, Staple, Goldspur, and the *cinque ports* of Hastings, Winchelsea, and Rye. *Parishes*, 342.

NORFOLK CIRCUIT.

BUCKINGHAM.—Amersham, Ashendon, Aylesbury, Buckingham, Cottesloe, Desborough, Newport, Stoke. *Parishes and Parochial Chapelries*, 207.

BEDFORD.—Barford, Biggleswade, Clifton, Flitt, Marshead, Redbornstoke, Stodden, Willey, Wixamtree. *Parishes*, 124.

HUNTINGDON.—Hurstingstone, Leightonstone, Normancross, Toseland.

CAMBRIDGE.—Wisbeach, Whittlesea and Thorney, Witchford, Ely, Papworth, North Stow, Chesterton, Staine, Staploe, Cheveley, Radfield, Flendish, Longstow, Wetherley, Armingford, Thriplow, Whittlesford, Chilford, and Cambridge liberty. *Parishes*, 164.

NORFOLK.—Smithdon, Brothercross, North-Greenhoe, Holt, North Erpingham, Happing, Tunstead, South Erpingham, Eynesford, Launditch, Gallow, Freebridge-Lynn, Freebridge-Marshland, Clackelose, South Greenhoe, Mitford, Forehoe, Taverham, E. and W. Flegg, Walsham, Clavering, Loddon, Blofield, Henstead, Humbleyard, Depwade, Wayland, Grimshoe, Shropham, Guiltcross, Diss, Earsham, and Norwich liberty. *Parishes*, 660.

SUFFOLK.—Samford, Bosmere and Claydon, Cosford, Babergh, Risbridge, Thingoe, Lackford, Blackford, Thedwestry, Hartesmere, Stow, Thredling, Loes, Carlford, Colnies, Wilford, Flomesgate, Hoxne, Blything, Wangford, Lothingland and Mutford. *Parishes*, 575.

OXFORD CIRCUIT.

OXFORD.—Banbury, Bloxham, Chadlington, Bampton, Wootton, Ploughley, Bullington, Dorchester, Thame, Lewknor, Ewelme, Langtree, Binfield, Pirton. *Parishes*, 280.

BERKSHIRE.—Shrivenham, Faringdon, Garfield, Ock, Homer, Moreton, Reading, Compton, Wantage, Kintbury-Eagle, Lambourn, Faireross, Morcton, Theale, Sonning, Charlton, Ripplesmere, Wargrave, Cookham, Beynhurst, Bray. *Parishes*, 147.

GLOUCESTER.—Dudston and Kingsbarton, Botloe, Westminster, Cheltenham, Cleeve, Tewkesbury, Tibaldstone, Kiftsgate, Deerhurst, Slaughter, Brightwells-barrow, Bradley, Crowthorne and Minety, Rapsgate, Bisley, Whitstone, Westbury, St. Briavells, Blidesloe, Berkeley, Longtree, Grumbald's-ash, Thornbury, Henbury, Langeley and Swinehead, Barton-regis, Puklechurch, and part of the duchy of Lancaster. *Parishes*, 320.

WORCESTER.—Doddingtree, Halfshire, Oswaldslow, Pershore, Blackenhurst. *Parishes*, 167.

MONMOUTH.—Abergavenny, Skenfreth, Ragland, Caldicott, Usk, Wentlloog. *Parishes*, 127.

HEREFORD—Wigmore, Wolphy, Broxash, Stretford, Huntington, Grimsworth, Radlow, Graytree, Wormelow, Webtree, Ewyas-Lacy. *Parishes*, 176.

SHROPSHIRE or SALOP.—N. and S. Bradford, Brimstree, Chirbury, Condover, Ford, Munslow, Oswestry, Overs, Pimhill, Purslow, Stottesden; the boroughs of Bridgenorth, Ludlow, Shrewsbury; and the town and liberty of Wenlock. *Parishes*, 230.

STAFFORD.—Totmonslow, Pirehill, Cuttlestone, Offlow and Seisdon. *Parishes*, 176.

MIDLAND CIRCUIT.

LINCOLN.—1. *Lindsey*—Yarborough, Manley, Corringham, Aslaeoe, Walsheroft, Bradley and Haverstoe, Ludborough, South Eske, Calceworth, Hill, Bolingbroke, Candleshoe, Horncastle, Gartree, Wraggoe, Lawress, Well, and Lincoln liberty. 2. *Kesteven*—Boothby-Graffo, Langoe, Flaxwell, Aswardhurn, Loveden, Winnibriggs and Threo, Grantham-Soke, Beltisloe, Ness, Aveland, 3. *Holland*—Skirbeck, Kirton, Elloe. *Parishes*, 630.

RUTLAND.—Alstoe, East, Martinsley, Oakham-Soke, Wrandike. *Parishes*, 50.

NORTHAMPTON.—Chipping-warden, Cleley, Corby, Fawsley, Guilsorqough, Greensnorton, Hamfordshoe, Higham-Ferrers, Huxloe, Kings-Sutton, Navisford, Nobottle-Grove, Orlingbury, Polebrook, Rothwell, Spellhoe, Towcester, Willybrook, Wymersley, and Peterborough liberty. *Parishes*, 336.

Midland Circuit—*continued.*

Counties. *Hundreds, Wards, Wapentakes, &c.*

Leicester.—Framland, Gartree, East and West Goseote, Guthlaxton, Sparkenhoe, and Borough of Leicester. *Parishes*, 200.

Derby.—High Peak, Scarsdale, Wirksworth, Appletree, Morleston and Litchurch, Repton and Gresley. *Parishes*, 116.

Nottingham.—Bassetlaw, Thurgarton, Newark, Broxtow, Bingham, Rusheliffe, liberties of Nottingham, and Southwell, and Scrooby. *Parishes*, 168.

Warwick.—Hemlingford, Knightlow, Barlichway, Kington, and county of the city of Coventry. *Parishes* (entire), 201.

Western Circuit.

Southampton, Hampshire, or Hants.—1. *Andover division*—Andover, Wherwell, Thorngate, King's Sombourn, Barton-Staecy. 2. *Kingsclere division*—Chutely, Evingar, Kingsclere, Overton, Pastrow. 3. *Basingstoke division*—Basingstoke, Bermond's-pit, Crondall, Holdshott, Odiham, Mitcheldever. 4. *Alton division*—Alton, Bishop's Sutton, Selborne, East Meon, Finchdean, Alresford new liberty. 5. *Fawley division*—Bountisborough, Buddlesgate, Fawley, Mainsborough, Mansbridge. 6. *Portsdown division*—Bosemere, Fareham, Hambledon, Meon Stoke, Portsdown, Titchfield, part of Bishop's Waltham, and liberties of Alverstoke, and Gosport, and Havant. 7. *New Forest East division*—New Forest, Redbridge, Ringwood, part of Bishop's Waltham, and liberties of Beaulieu, Dibdin, and Lymington. 8. *New Forest West division*—Christehureh, Fordingbridge, Ringwood, liberties of Breamore, Westover, city of Winchester and Stoke liberty, Borough of Portsmouth, Town and county of Southampton. 9. *Isle of Wight*—East Medina liberty, West Medina liberty. *Parishes*, 253.

Wiltshire, or Wilts.—Malmesbury, Chippenham, Bradford, Melksham, Calne, Posterne and Cannings, Highworth, Crieklade, and Staple, King's-bridge, Elstub, and Everley, North Damerham, Ramsbury, Selkley, Kinwardstone, Whorwelsdown, Westbury, Swanborough, South Damerham, Warminster, Heytesbury, Amesbury, Mere, Downton, Chalk, Dunworth, Braneh and Dole, Cawden and Cadworth, Underditeh, Alderbury and Frustfield. *Parishes*, 295.

Dorset.—Coombsditeh, Pimperne, Rushmore, Corfecastle, Bere-regis, Hundredsbarrow, Hasilor, Rowbarrow, Winfrith, Beaminster, Forum and Redhone, Eggerton, Godderthorne, Whitchureh-Canonieorum, Buckland-Newton, Corne Totcombe and Modbury, Whiteway, Culliford Tree, St. George, Piddletown, Tollerford, Uggeseomb, Bradbury, Cogdean, Cranborne, Knowlton, Loosebarrow, Monkton up Wimborne, Sixpenny-Handley, Wimborne St. Giles, Sherborne, Yetminster, Brownshall, Redlane, Sturminster-Newton-Castle, and the liberties of Dewlish, Bindon, Ower-Moigne, Stoborough Broad-Windsor, Frampton, Loders and Brotherampton, Poorstoek, Alton-Paneras, Piddletrenthide, Sydling-St. Nicholas, Fordington. Portland isle, Piddlehinton, Sutton-Pointz, Wayhouse, Wyke-regis and Eltwall, Aleester, Gillingham, Halstoek, Ryme-Intrinseca, and Stower-Provost. *Parishes*, 250.

Somerset.—Portbury, Hardeliffe and Bedminster, Chew, Keynsham, Bath-Forum, Wellow, Kilmersdon, Chewton, Brent and Wrigton, Winterstoke, Bempstone, Wells-Forum, Whitestone, Frome, Bruton, Ferris-Norton, Horethorne, Catsash, Somerton, Whitley, Glaston twelve hides, Huntspill and Puriton, North and South Petherton, North Curry, Abdiek and Bulstone, Martock, Tintinhull, Stone, Houndsborough, Berwick and Coker, Crewkerne, East and West Kingsbury, Taunton and Taunton dean, Andersfield, Pitney, Milverton, Cannington, Williton and Freemanners, Carhampton, and the liberties of Hampton and Claverton, Mells and Leigh, Witham-Friary. *Parishes*, 409.

Devon.—Braunton, Skerwill, South Molton, Fremington, Shebbear, Hartland, Blaek Torrington, Winkley, with North Tawton, Crediton, East and West Bridleigh, Witheridge, Bampton, Tiverton, Halberton, Hemyoek, Axminster, Colyton, Ottery-St. Mary, Cliston, Hayridge, Lifton, Tavistoek, Roborough, Plympton, Ermington, Stanborough, Coleridge, Haytor, Teignbridge, Exminster, Wonford. *Parishes*, 430.

Cornwall.—Stratton, Lesnewth, East, West, Trig, Pyden, Powder, Kerrier, Penwith. *Parishes*, 208.

Northern Circuit.

York.—1. *North riding*—E. and W. Gilling, Hang, E. and W., Hallikeld, Bulmer, Ryedale, Birdforth, Allertonshire, Langbaurgh, Whitby-Strand, Pickering-Lythe, Ainsty, or liberty of York, and liberty of St. Peter. 2. *East Riding*—Dickering, Buekrose, Holderness, Harthill, Howdenshire, Ouse and Derwent. 3. *West Riding*—Staineliffe and Ewcross, Claro, Skyraek, Barkston Ash, Morley, Staineross, Osgoldeross, Strafforth and Tickhill, Agbrigg. *Parishes*, 604.

Durham.—Darlington, Chester, Easington, Stoekton; and in *North Durham*, Norhamshire and Islandshire. *Parishes*, 120.

Northumberland.—Glendale, Bamborough, Coquetdale, Morpeth, Castle, and Tindale or Tynedale.—*Parishes*, 460.

Cumberland.—Eskdale, Cumberland, Allerdale below Derwent, Allerdale above Derwent, Leath. *Parishes*, 104.

Westmoreland.—East Ward, West Ward, Kendal and Lonsdale. *Parishes*, 32.

Lancashire.—Lonsdale, Amounderness, Blackburn, Leyland, Salford, West Derby. *Parishes*, 66.

Chester and Wales Circuit.

Cheshire.—Wirral, Broxton, Edisbury, Bueklow, Macclesfield, Northwich, Nantwieh. *Parishes*, 86.

Anglesea.—Llyfon, Maltreath, Menai, Talybolion, Twerelyor, and Tyndæthway. *Parishes*, 73.

Brecknock.—Builth, Criekhowel, Defynoe, Merthyr, Penkelly, and Talganth. *Parishes*, 61.

Cardigan.—Geneur-Glyn, Upper Har, Lower Har, Moldyn, Pennarth, Troedyraur. *Parishes*, 58.

Carmarthen.—Carnwallon, Cathinog, Cayo, Derlys, Elvet, Iskennan, Kidwelly, Perfædd. *Par.* 87.

Caernarvon.—Commitmaen, Creudyn, Dinnlaen, Evionydd, Gafflogian, Isaf, Is-Gorfai, Nant-Conway, Uchaff, Uweh-Gorfai, and Bangor eity. *Parishes*, 71.

Denbigh.—Bromfield, Chirk, Isaled, Isdulas, Ruthin, and Yale. *Parishes*, 50.

Flint.—Coleshill, Maelor, Mold, Prestatyn, and Rhuddlan. *Parishes*, 28.

Glamorgan.—Caerphilly, Lowbridge, Dinas-powis, Kibber, Dangwelach, Miskin, Neath, Newcastle, Agmore. *Parishes*, 118.

Merioneth.—Ardudwy, Eidernion, Estimaner, Pennllynn, Tal-y-bount, and Mouddwy. *Parishes*, 37.

Montgomery.—Langfyllyn, Dewddwr, Pool, Caurs, Mathrafal, Machynllaeth, Llanidloes, Montgomery, and Newtown. *Parishes*, 47.

Pembroke.—Castlemartin, Dewisland, Daughleddau, Cemaes, Cilgerran, Narberth, and Rôs or Rhôs. *Parishes*, 145.

Radnor.—Colwyn, Cofnlys, Knighton, Painscastle, Radnor, and Rhayadyr. *Parishes*, 52.

Middlesex.

Spelthorne, Isleworth, Elthorne, Gore, Edmondton, and Ossulston. *Parishes* (exclusive of city parishes), 75.

The *Ancient* and the *Saxon Divisions* of England and Wales are stated in the following tables: —

Ancient Divisions.	*Included Modern Counties.*	*Chief Towns.*
DAMNONII,	Cornwall and Devon,	*Isca Dannoniorum* (Exeter.)
DUROTRIGES,	Dorset,	*Durnovaria* (Dorchester.)
BELGÆ,	Somerset, Wilts, the northern portion of Hants, and the Isle of Wight,*	*Aquæ Solis* (Bath); *Venta Belgarum* (Winchester.)
ATREBATTI,	Berks,	*Gallena* (Wallingford??)
REGNI,	Surrey, Sussex, and the southern portion of Hants,	*Naviomagus* (Croydon?)
CANTIUM,	Kent,	*Durovernum* (Canterbury.)
TRINOBANTES,	Middlesex and Essex,	*Londinum* (London.)
ICENI,	Suffolk, Norfolk, Cambridge, and Huntingdon,	*Venta Icenorum* (Norwich.)
CATIEUCHLANI,	Bucks, Hertford, and Bedford,	*Verulamium* (Verulam, near St. Albans.)
DOBUNI,	Gloucester and Oxford,	*Glevum* (Gloucester.)
SILURES,	Hereford, Monmouth, Radnor, Brecon, and Glamorgan,	*Isca Silurum* (Caerleon.)
DIMETÆ,	Caermarthen, Pembroke, and Cardigan,	*Maridunum* (Caermarthen.)
ORDOVICES,	Flint, Denbigh, Merioneth, Montgomery, Caernarvon, and the Isle of Anglesea,	*Segontium* (near Caernarvon.)
CORNAVII,	Chester, Salop, Stafford, Warwick, and Worcester,	*Deva* (Chester.)
CORITANI,	Lincoln, Nottingham, Derby, Leicester, Rutland, and Northampton,	*Lindum* (Lincoln.)
BRIGANTES,	York, Lancaster, Westmoreland, Cumberland, and Durham,	*Eboracum* (York.)
OTTADINI,	Northumberland,	*Axelodunum* (Hexham.)

Under the Romans, England and Wales were divided into the following five provinces, but the exact boundaries of these are not known: — *Britannia Prima*, comprehending the south of England; *Britannia Secunda*, Wales; *Maxima Cæsariensis* and *Valencia*, the northern counties, and *Flavia Cæsariensis*, ths midland counties of England.

Table of the Kingdoms erected by the Saxons, or the Saxon Heptarchy.

Kingdoms.	*Counties, &c.*	*Chief Towns.*
KENT,	Kent,	Canterbury.
SOUTH-SAXONS,	Sussex and Surrey,	Chichester and Southwark.
WEST-SAXONS,	Cornwall, Devon, Dorset, Somerset, Wilts, Hants, and Berks,	Launceston, Exeter, Dorchester, Bath, Salisbury, Winchester, and Abingdon.
EAST-SAXONS,	Essex, Middlesex, and a portion of Hertford,	London.
EAST-ANGLES,	Norfolk, Suffolk, Cambridge, and the Isle of Ely,	Norwich, Bury St. Edmunds, Cambridge, and Ely.
MERCIA,	Gloucester, Hereford, Worcester, Warwick, Leicester, Rutland, Northampton, Lincoln, Huntingdon, Bedford, Bucks, Oxford, Stafford, Derby, Salop, Nottingham, Chester, and part of Hertford.	Gloucester, Hereford, Worcester, Warwick, Leicester, Oakham, Northampton, Lincoln, Huntingdon, Bedford, Aylesbury, Oxford, Stafford, Derby, Shrewsbury, Nottingham, Chester, and Hertford,
NORTHUMBERLAND,	Lancaster, York, Durham, Cumberland, Westmoreland, Northumberland, and Scotland as far as the Firth of Forth,	Lancaster, York, Durham, Carlisle, Appleby, and Newcastle.

TOPOGRAPHY. — The details under this head shall commence with an account of the Metropolis, and be followed up by notices of cities, towns, and other places in the several counties, the latter being arranged in alphabetical order.

§ 1. *The Metropolis.*

LONDON, the capital of England, and the metropolis of the British empire, is situate in the counties of Middlesex and Surrey, on the banks of the Thames, about 60 miles from the sea. For purposes of criminal judicature, portions of the counties of Essex and Kent are also included within the municipal limits. The larger portion of the city is built on the north side of the river, upon a gravelly clay soil, which rises with a very gentle slope from the water's edge; the southern portion stands upon a dead flat, very little raised above the level of the stream. The outline of the city is extremely irregular, and it is therefore difficult to determine its precise extent. It is usually said to include all the buildings comprised within a circle of 4 miles radius round St. Paul's, which will give it a circumference of 24 miles. The area actually covered with buildings and streets, together with the surface of the Thames, cannot be less than from 19 to 20 square miles. It is to be borne in mind, however, that London is not merely one city, but that, exclusive of the many scattered groups of villages and houses lying on its outskirts, it consists of eight distinct cities and boroughs, viz. the *city of London within and without the walls;* the *city of West-*

* Arrowsmith includes the Isle of Wight in the territory of the Regni.

minster; the boroughs of *Mary-le-Bone, Finsbury, Tower Hamlets, Southwark, Lambeth,* and *Greenwich,* the five first mentioned of which are situate in Middlesex, the two next in Surrey, and the last in Kent. The Parliamentary Divisions of the metropolis (in the number of which we venture to include the borough of Greenwich) will be seen in the following statement, which also exhibits the population of each borough according to the census of 1831, and the annual value of the included real property, as ascertained by the returns under the property-tax assessment in 1815:—

Metropolitan Boroughs.	*Parochial and other Divisions included either in whole or in part.*	*Population in 1831.*	*Annual value of real property assessed in 1815.*	*Representatives in Parliament.*
			£.	
LONDON, ...	The parishes within the ancient city and liberties, including the Inner Temple, and the Middle Temple,	132,803	1,056,158	4
WESTMINSTER, ...	The parishes within the ancient city and liberties, including the precinct of the Savoy,	202,891	1,254,702	2
MARY-LE-BONE, ..	St. Mary-le-bone; Paddington; and St. Pancras,	240,294	772,617	2
FINSBURY, ...	St. Luke; St. George the Martyr; St. Giles-in-the-Fields; St. George, Bloomsbury; St. Mary, Stoke-Newington; St. Mary, Islington; St. James and St. John, Clerkenwell; St. Sepulchre Without, and St. Andrew Without, Holborn; and the liberties, &c. of Saffron-Hill, Hatton-Garden, Ely Rents and Place, the Rolls, Glasshouse-Yard, the Charter-House, Lincoln's Inn, Gray's Inn, Furnival's Inn, and Staples' Inn,	226,086	803,372	2
TOWER HAMLETS,	Christchurch, Spitalfields; St. Ann, Limehouse; St. Botolph Without; St. George's-in-the-East; St. John, Hackney; St. John, Wapping; St. Leonard, Bromley; St. Leonard, Shoredith; St. Mary, Stratford-le-bow; St. Mary, Whitechapel; St. Matthew, Bethnel Green; St. Paul, Shadwell; Stepney, including Mile-End, Poplar, Blackwall, and Ratcliffe; the Tower; the liberty of Norton-Folgate, and the precinct of St. Catherine,	367,864	915,058	2
SOUTHWARK, ...	The parishes in the old borough of Southwark, together with those of Rotherhithe, Bermondsey, and Christchurch: also the Clink liberties of St. Saviour's parish,	134,117	400,119	2
LAMBETH, ...	St. Mary, Newington-Butts; St. Giles, Camberwell; and that part of St. Mary, Lambeth, situate to the North of Brixton,	160,613	389,233	2
GREENWICH, ...	Parishes of Greenwich, Charlton, St. Nicholas and St. Paul, including Deptford, Woolwich, &c.	65,917	121,340	2
	Total, ...	1,530,585	5,712,599	18

The whole mass of building within the limits of London is said to comprehend about 9000 streets, lanes, terraces, &c., 80 squares, 24 market-places, and more than 180,000 houses. The streets are for the most part wide, few even of the most ancient of them being so narrow as to prevent two carriages from passing abreast, and in the newer districts many are broad enough to admit of five or six, and are besides interspersed with large open areas or squares. The finest streets are those in the quarters of Westminster and Mary-le-Bone. This portion of the town is known by the name of the *West-end,* and it contains the royal palaces, the seats of the legislative and executive government, the parks or public walks, and, in general, the residences of the aristocracy. The narrowest streets are in the *City,* which is the most ancient and central part of London. The *East-end* comprehends, along with other districts, the most populous portion of the borough of the Tower Hamlets, which is so called from its consisting originally of hamlets or villages holding of the constable of the Tower as their feudal superior, and being under his jurisdiction and authority. Many opulent merchants, particularly the class engaged in the foreign and colonial trade, have their counting-houses in this quarter; and it is the seat of many important manufactures, of which the most considerable are the silk manufacture of Spitalfields, and the sugar-refining business. It also contains the extensive docks and warehouses at Blackwall belonging to the East India-Company, those connected with the West-India trade at Poplar, the London Dock at Wapping, and St. Catherine's Dock, near the Tower. Southwark and Lambeth contain several extensive iron-founderies, breweries, rectifying distilleries, and vinegar works, and are besides distinguished for many other important manufactures, especially those of patent shot, plate-glass, steam-engines and other machinery, soap, starch, leather, and parchment, the particular seat of the two last of which is Bermondsey in Southwark.—The latest additions made to the town are on the sides of the north and north-west, there being many places in the northern parts of the districts of St. Pancras, Fins-

bury, and the Tower Hamlets, formerly recognised only as villages, which are now, by means of the erection of continuous lines of streets, united to the capital. As the argillaceous loam or brick clay on which London stands affords an abundant and convenient supply of building material, most of the houses are built with bricks, which in the finer streets are faced with stucco in such a manner as to resemble polished stone. In general, the houses are about three stories high, and from their uniformity present an appearance by no means imposing. It has been remarked that there are few public buildings and monuments in London at all worthy of its extent and wealth; still among the number which it possesses there are edifices of every variety of style, character, and extent, and structures adapted for every purpose of national or municipal government, law, religion, education, charity, science, art, sociality, amusement, and trade, abound throughout the city; but the mere enumeration of their names would occupy several of our pages. Our description, therefore, must necessarily be limited to a few of the more prominent and the more celebrated of these structures.

The *cathedral church of St. Paul*, in the city of London, claims our first attention, as being at once the most prominent, and the most interesting object. The spot on which it stands had been occupied for many centuries by successive churches of the same name, the last of which was destroyed by the great fire, in 1666. The first stone of the present building was laid by Sir Christopher Wren, in 1675, and the last in 1710, but the whole decorations were not finished till 1723. The church is in the Roman style of architecture, built in the form of a cross, with a large dome, in the centre. It is 500 feet in length, 180 in breadth, and the height, to the top of the cross, which surmounts the dome, 404. The whole building is of Portland stone, now very much discoloured by smoke and long exposure to the weather. The interior is very plain; but of late years, the dull monotony of its appearance has been, to a considerable extent, relieved by a number of monuments, erected to the memory of distinguished men. The *church of St. Peter*, Westminster, commonly called *Westminster Abbey*, though not so prominent an object as St. Paul's, is of not less distinguished fame. It is likewise in the form of a cross, but without a dome or central tower; and the tameness of its external appearance is but little relieved by two modern towers at its west end. The whole building is in the Norman and Gothic styles, and some parts of it are of great antiquity. The interior is crowded with monuments of the illustrious dead; and it is here that the ceremony of the coronation of the kings and queens of England is performed. The other churches of the metropolis are very small in size; and none of them can boast of high architectural character, except, perhaps, that of *St. Stephen*, Walbrook. Adjoining to Westminster Abbey, is *Westminster Hall*, the only remaining part of a palace commenced by King William Rufus. It measures 276 feet in length, by 100 in breadth, and is covered with an elegant roof formed of oak. It has long been occupied by the Supreme Courts of England, and is destined to form the entrance-hall of the magnificent buildings that are now erecting for the accommodation of the Imperial Parliament. In the same neighbourhood is *Whitehall*, a small portion of a palace commenced by King James I. The design was furnished by Inigo Jones, and the ceiling was painted by Rubens; it is now occupied as a military chapel. The royal palaces of *Pimlico*, or *Buckingham House*, a modern stone building; and *St. James's*, an ancient, irregular, and gloomy structure of brick, are also situate in Westminster. To these may be added Somerset-House, in the same neighbourhood, a large pile of building, which is occupied by various public boards, and by King's College; the National Gallery; the British Museum; University College; Drury Lane and Covent Garden Theatres; the Temple and Lincoln's Inn, for students of law; and many other large and costly structures, more remarkable, however, for their extent and utility, than for their architectural elegance.

On the east side of London is *The Tower*, an ancient fortress, of little importance as a military defence, but of great historical interest. It derives it name from a lofty square tower, or keep, in the centre, erected by William the Conqueror, to overawe the citizens of London, and consists of a number of buildings irregularly piled together, and surrounded by a wall and ditch. The Tower is now used principally as an arsenal, or military storehouse, and occasionally also as a state prison. Here the Crown jewels are deposited, and also a portion of the public records of the kingdom. The *Bank of England* is likewise an immense, irregular, mass of buildings, in the heart of the city, completely isolated, and surrounded with a high wall, which is in some parts ornamented by architectural designs. Very near the the Bank, are the *Guildhall*, a large building used for the public meetings and festivals of the citizens of London; the *Mansion-House*, the residence of the Lord Mayor; and the site of the *Royal Exchange*, which was destroyed by fire in January 1838, and is about to be rebuilt on a more extensive and magnificent scale. The great fire, which destroyed nearly the whole of London in 1666, is commemorated by a pillar, called *The Monument*, 202 feet high, which stands close by London Bridge, and 202 feet from the spot where the fire is said to have commenced.

To whatever extent London may be deemed inferior to other cities in point of external decoration, it will yield to none in regard to the possession of the means of supplying the wants, and increasing the comforts, of a great population. The neatness of the squares, the convenience of the side pavements for the use of foot passengers, the general cleanliness of the streets, the brilliant light with which the latter are every evening illuminated, together with the amazing number of shops, and the costly merchandise therein displayed, are objects of interest to every visiter, and especially to foreigners. Nowhere else in the world are undertakings conducted on an equal scale of magnitude. Sewers, which rival, at least in point of extent, the celebrated constructions of the same nature at Rome, are the means of keeping the streets free from impurities. Water, that important necessary of life, is supplied by eight different incorporated companies, in quantities which, according to a statement laid before parliament in 1834, was sufficient to meet a yearly consumption of 228,914,761* hogsheads, the average daily supply being at the rate of 180½ gallons to

* The immense supply stated in the text is drawn partly from the Thames, and partly from more distant sources. The most celebrated of these is that of the New River, an open canal executed in the 17th century, which is conveyed from near Ware, in Hertfordshire, to Islington on the north side of London, a distance of 40 miles. The New River Company furnishes a daily supply of 16,900,000 gallons.

each of 191,066 houses and buildings, including manufactories. The lighting of the metropolis is effected by several coal-gas companies, seven of which have been for years incorporated by acts of parliament. The business of these companies is on the aggregate conducted on a scale of prodigious magnitude, but we have no recent information as to its extent in detail. So far back as 1828, the total length of the underground main and branch pipes belonging to the gas-light companies, was estimated to exceed 300 miles, and the quantity of gas thus conveyed fed 7800 street lamps and 70,400 jets of argand-flames in shops and dwelling-houses. Six magnificent bridges cross the river Thames. Three of these, — namely, *London bridge*, which, after being rebuilt, was opened up in 1831, *Southwark bridge*, completed in 1819, and *Blackfriars bridge*, which has been in use since 1769, — afford the means of communication between the City and the borough of Southwark. Higher up the river, *Waterloo* or the *Strand bridge*, completed in 1817, *Westminster bridge* in 1750, and *Vauxhall bridge* in 1816, connect the districts of Westminster and Lambeth. London, Waterloo, Blackfriars, and Westminster bridges are built of stone, the material used in the construction of the two first mentioned being the most durable granite. Those of Southwark and Vauxhall are constructed of cast-iron; but in both, the metallic arches rest on piers and abutments of masonry. These bridges vary in length from 1,242 feet (Waterloo) to 708 feet (Southwark), in breadth of road-way from 53 feet (London) to 36 feet (Vauxhall), and in the span of the principal arches from 240 (Southwark) and 152 feet (London) to 76 feet (Blackfriars.) In addition to these communications, the *Thames Tunnel*, a subterranean passage beneath the bed of the Thames, was in 1825 commenced at a part of Rotherhithe, in Southwark, opposite to the London docks. The works connected with it have been protracted by frequent irruptions of the river, but the main difficulties which obstructed its progress are now overcome, and it is expected that the passage-way will be available by 1842. It will form a commodious passage for carriages as well as foot passengers, between the eastern districts of London and those of Southwark. When we mention that the expense attending this stupendous undertaking was at the outset upwards of £157,000, and fell entirely upon the projectors, and that among the bridges which, in a similar manner, owe their origin and completion to associations of private individuals, Southwark bridge has cost £800,000, and Waterloo bridge upwards of £1,000,000, the reader may be able to form some idea of the enterprising spirit and the wealth of the citizens of London. We may add, that along the west and north sides of the metropolis are several spacious parks, which are of great importance to the citizens as places of exercise and recreation, and eminently conducive to the preservation of the health of the public. These are St. James's Park, the Green Park, Hyde Park, and the Regent's Park. The last of these is surrounded by magnificent buildings, and contains the gardens of the Zoological Society, whose collection of animals is one of the most interesting and attractive objects of public curiosity. Hyde Park is the largest, and is continuous with Kensington Gardens, a large inclosure attached to the royal palace of Kensington. The Serpentine River, so often mentioned as the resort of the youth of London for skating in winter, is a large oblong pond, partly in Kensington Garden, and partly in Hyde Park.

We have already stated (see Table, *anté*, p. 226), that in 1831 London contained 1,530,585 inhabitants, or about a sixteenth of the entire population of the United Kingdom. It contained 230,000 inhabitants more than (according to conjecture) are to be found in Pekin or Jedo; 621,000 more than Paris did in 1836, and at least thrice the number of the population of Constantinople or Hangtcheou. Setting aside, however, the Chinese and Japanese cities, as their reputed populousness rests upon vague and doubtful authority, it is certain, that in respect to population, ancient Rome is the only city that can be said to have surpassed the British metropolis. What quantity of food is required for the sustenance of such an enormous congregation of human beings, we have not at present the means of ascertaining; but in 1826, when London was confined within narrower limits than at present, the yearly consumption of provisions by its inhabitants was stated to be 466,168 sacks of flour; 250,973 quarters of wheat; 158,920 head of cattle; 1,485,080 sheep; and 1,220,000 lambs, calves, and pigs. The consumption of porter during the same year was about 1,700,000 barrels; and that of coals for fuel upwards of a million and a half of chaldrons. At present the consumption of coals in dwelling-houses and manufactories exceeds 2,500,000 tons yearly. We may add, that it is estimated that there are annually consumed in London 38,400,000 quarts of milk, and 29,000,000 lbs. or 12,946 tons of butter; to supply which, 12,000 cows will be required for the former, and 200,000 for the latter. It would be tedious to enumerate all the other articles which are neces-

sary for the support of the population. The constant demand gives rise to a regular trade, and the supply is generally abundant, and reasonably cheap.

The city of London proper is governed by a *corporation* styled the *Lord Mayor, Aldermen, and Citizens of London*. It consists of 26 aldermen, who fill the office of Lord Mayor by turns, from year to year, two sheriffs, a recorder, town-clerk, and a common council of representatives, elected by the livery or freemen of the city. The citizens are distributed into 12 companies, some of which are very wealthy, and possess splendid halls. The municipal officers of Westminster are a high steward and a high bailiff, both appointed by the dean and chapter of the abbey. The other parts of the metropolis have no municipal officers, but are under the jurisdiction of the magistrates of the counties to which they respectively belong. For the better security of the public peace, a *new police* has been lately established under the immediate control and superintendence of the Secretary of State for the Home Department. The *military garrison of London* consists of several regiments or battalions of horse and foot guards, stationed in Westminster, the Regent's Park, and the Tower; but their services are very rarely required for the suppression of civil disturbances.

London returns 20 members to the Imperial Parliament (see table, *anté*, p. 204); it is also the seat of a bishop, who ranks next in dignity to the archbishops of Canterbury and York.

London contains a *University* erected in 1836, by royal letters patent, for conducting examinations in literature, science, and art, and conferring academical degrees. It is governed by a senate, consisting of a chancellor, vice-chancellor, and a body of fellows; the chancellor and fellows being appointed by the Crown, and the vice-chancellor elected annually by the members of the senate. Connected with the University are two colleges, named *University College* and *King's College*. The former, which was opened in 1828, admits students without any reference to religious creeds: the latter, which dates its opening about two years later, is devoted exclusively to the education of members of the established church. The great public schools in which classical learning is taught, are *St. Paul's School*, founded in 1510; *Westminster School*, in 1590; *Christ's Hospital*, or the *Blue-coat School*, in 1552; the *Charterhouse School* (Chartreux), in 1611; *Merchant Tailors' School*, in 1561; and the *Mercers' Company School*, in 1531. There are also in London sixteen schools of medicine, as many of law, and five of theology; eighteen public libraries; a national museum; a national gallery of paintings; four patent, and thirteen or fourteen minor theatres; a botanical garden (at Chelsea); a horticultural garden (at Turnham-Green, Chiswick); two zoological gardens, besides many private establishments devoted to similar objects. The number of literary, scientific, and professional societies in the metropolis, exceeds fifty, of which fifteen have charters or acts of incorporation. The institutions connected with benevolent objects amount to several hundreds. So far back as 1830 (see "Companion to the Almanac" for that year) there were in London ninety-one institutions or societies for affording medical and surgical aid; eighty-five for granting pecuniary relief; eleven of the nature of correctional and penitentiary institutions; twenty-six miscellaneous benevolent institutions for promoting general and particular objects of humanity; fifty-five for promoting religious improvement; and eighty-one (exclusive of ward and parochial schools) for promoting general and religious education. Since that time, an increase has taken place in the number of these. Some of them are unparalleled for the extent of their operations, and the large amount of the funds voluntarily subscribed by their members. Let it suffice as an illustration of the correctness of this remark, that the income for the current year (1838-1839), of six of the leading metropolitan societies established for missionary and other religious purposes exceeded £489,000, of which sum it may be remarked, rather more than a half was received by three societies supported alike by churchmen and dissenters.

In regard to *manufactures*, although London, when compared with other large towns in the kingdom, can scarcely be called a manufacturing place; yet the various articles fabricated in and around it, afford employment to a great number of individuals. The silk trade is that in which at present the greatest number of people are occupied, their number being estimated at 48,000; but, owing to fluctuations in their trade, the workmen of this class are generally in a very poor and miserable condition, and exposed occasionally to much distress. There are numerous other small articles, which are either manufactured exclusively in London, or which, having the reputation of being produced there, meet with a readier sale in the market. Of the first class are silk fringes, coach-lace, gold and silver lace, lapidary articles; and of the second, needles, pins, fine scissors, and penknives, to which may be added musical,

mathematical, and surgical instruments; brushes, combs, watches, jewellery, gold, and silver plate; ornamental and useful furniture, coaches, and other carriages, saddlery, painter's and dyer's materials; numerous medicinal and chemical preparations, particularly magnesia, aquafortis, sal-volatile, essential oils, and other articles. Porter brewing is also a great trade, and almost peculiar to London, and the quantity produced for home consumption and exportation is very great. The printing and publication of books is also an extensive trade. The annual value sold is estimated at from £1,000,000 to £2,000,000. The number of single newspapers published annually in London exceeds 29,000,000.* According to the last population return, there are 8950 males, above twenty years of age, employed as printers, booksellers, and binders, or in other branches of the business. It is supposed to afford subsistence to about 50,000 individuals. The number of tailors is stated to be 13,783; of shoemakers, 15,274; of bakers, 5209; of butchers, 4069; of carpenters, 12,254; of cabinetmakers, 4921; of publicans, 4804; of upholsterers, 1724; of glaziers and plumbers, 2272; of bricklayers, 4874; of house painters, 4439; of blacksmiths, 4106; of whitesmiths, 1822; of plasterers, 1725; and of stone masons, 1592.

London, in respect to the *extent and activity of its commerce*, both inland and maritime, stands without a rival, and if we bring it into comparison not only with the principal trading cities in the world, but even with some of the states that are most distinguished for commercial activity, we shall find the result of our inquiries calculated to excite, in a high degree, feelings of astonishment. In December 1835, the aggregate tonnage of the vessels belonging to the port of London was 566,152 tons, which exceeded the tonnage belonging to the port of New York in 1836 by 162,338 tons, was nearly equal to a third of the tonnage of the entire mercantile navy of the United States in the same year,† and fell short of that of France in 1837‡ by only 130,826 tons. In 1825, 5,732 vessels of 1,060,687 tons aggregate burthen, loaded with the productions of every country in the world, entered the port of London, whilst the foreign commerce of France during the same year employed only a tonnage of 942,000 tons distributed among 8,704 vessels. At the same period the foreign commerce of the United States employed 1,048,000 tons of shipping; that of Prussia, 572,000 tons; that of the Netherlands, 559,000 tons; and that of the immense empire of Russia only 310,000 tons. Turning to compare the value of the exports of London with those of the principal trading cities and commercial states during some of the periods most favourable to commerce, we find that in 1815 the exports of the British metropolis amounted to the enormous sum of £22,183,950, and those of Liverpool, the second exporting place in the world, to £17,657,439. In 1824, the exports of Havre, the first port in France, for the value of its merchandise, did not exceed £2,720,000. The exports of Trieste, in 1826, amounted to £3,024,760; those of St. Petersburg, in the same year, to £3,398,080; those of Lisbon in 1819, to £2,804,520; those of New York, in 1824, to £4,660,680; and those of the Havannah, in 1826, to £2,012,080. The yearly exports of France, taking the average of the years 1825, 1826, and 1827, were valued at £34,402,720. According to similar valuations, Austria, in 1826, exported to the value of £8,240,000; Portugal in 1819, £4,861,951; Prussia, on the average of the years 1822 and 1823, £12,751,360; the United States in 1826 £18,507,840; Spain, in the same year, £1,469,113; and Russia, in the same year, £8,683,800. Since the dates given in the preceding statement, circumstances may have occurred tending to augment or diminish the extent of the commerce of the several places and states therein named; but in reference to the superiority of the foreign trade of London, it may be safely affirmed that at present it exceeds not only that of every other city in the world, but even the entire foreign trade of each of the countries we have mentioned — France and the United States alone excepted.

The vast superiority of London as a trading place, when put in comparison with the other great ports of the kingdom, may be inferred from some of the details which we have given under the head of the commerce of England and Wales. Another proof of its relative importance is derived from the fact, that under the lately existing arrangements for the conveyance of letters, it contributed not much short of one-third of the Post-Office revenue derived from the whole of the United Kingdom.‖

* The number of newspaper stamps issued during the year ending 15th September 1837 was 53,496,207, of which the distribution was as follows:— London Newspapers, 29,172,797; English Provincial Newspapers, 14,996,113; Scotch Newspapers, 4,123,330; Irish Newspapers, 5,203,967.

† Total tonnage, 1,882,012 tons.

‡ 15,326 vessels, of which the aggregate tonnage was 696,978 tons.

‖ During the year ending January 1838, the amount of postage collected at London was £697,597; Liverpool, £90,747; Dublin, £70,070; Manchester, £69,232; Glasgow, £43,029; Edinburgh, £42,704;

A notion of the value of the inland and maritime trade of London can only be arrived at by approximate calculations. So far back as 1819, the total value of the merchandise transferred yearly by the trade of London was estimated at £120,000,000. Since that date the metropolis has advanced rapidly in population, manufacturing, industry, and commerce.

The Thames itself forms the *port of London;* and for several miles below London bridge the river is constantly crowded with ships from every part of the world, the masts of which present the appearance of an interminable forest. The limits of the port, however, are London Bridge and Deptford. The upper portion, extending from London Bridge to Limehouse, is divided into the *Upper*, *Middle*, and *Lower Pools*, below which, as far as Deptford and Greenwich, are two divisions named *Limehouse Reach* and *Greenwich Reach*. Further down the river, *Blackwall*, *Rugsby*, *Woolwich*, *Gallions*, and *Barking Reaches*, occur in succession. The celebrated docks connected with the port and trade of London, are the *West-India Docks*, the *London Docks*, *St. Katherine's Docks*, the *East-India Docks*, and the *Commercial Docks*. The first four of these are, as we have already noticed, situate on the north or Middlesex side of the Thames. The Commercial Docks are built on the Surrey side, at the bend of the river, opposite to Limehouse on the north, and the Isle of Dogs on the east. These great works are constructed on a most extensive scale. The tobacco warehouse belonging to the London Docks covers a space of nearly five acres, and the underground vaults, which are 18½ acres in extent, afford stowage for 60,000 pipes of wine.

In short, London is the grand centre of the commerce of the world, and the place to which the traders and money-dealers of all nations resort. In respect of wealth, and the extent and activity of its trade, it has no rival; and we seek in vain for any city in the ancient world which may be put in comparison with it. In respect of population, ancient Rome, as we have already remarked, is the only city which can be said to have surpassed it; for the reputed populousness of some of the cities of China and Japan rests upon vague and doubtful statements.

The most remarkable places in the vicinity of the metropolis will be described under the heads of the counties in which they are situate.

§ 2. *Bedfordshire.*

Bedford, the capital of the county, is a neat, clean town, situate on both banks of the Ouse, 48 miles N.N.W. of London. By its command of the navigation of the Ouse, it carries on a considerable trade in corn, coal, iron, and timber, with Lynn and Yarmouth. It contains several churches and charitable establishments, particularly a free-school, founded in 1566 by Sir William Harper, a native of this place, and alderman of London, who endowed the institution with estates that now produce £10,000 yearly. *Woburn Abbey*, the residence of the Duke of Bedford, is a spacious and noble building in the middle of an extensive park, near the town of *Woburn*. It is furnished with a large and valuable collection of statues and paintings, and is famous for the agricultural establishments of the noble proprietor. *Luton-hoo* is another very magnificent edifice; it belongs to the Marquis of Bute, and is superbly furnished with books, paintings, and sculptures. *Biggleswade*, on the river Ivel, in the east of the county, is noted for its corn and cattle markets. The corn-trade and the manufacture of lace and straw-plait, are carried on to some extent at *Leighton Buzzard*, near the borders of Buckinghamshire. *Luton*, and the smaller town of *Dunstable*, both situate in the south of the county, are distinguished for the manufacture of straw-plait.

§ 3. *Berkshire.*

Reading, the county town, stands on a rising ground on the banks of the Kennet, and is neatly and regularly built, though the houses are of brick, and the streets narrow. It carries on a considerable trade in flour, malt, corn, &c., and has two weekly markets. The woollen manufactures, of which at an early period this town was the seat, have long since fallen into decay, and their loss is now inadequately supplied by the making of coarse linens, sail-cloth, and sacking. *Newbury*, situate higher up the Kennet, still preserves, in its serges and shalloons, some vestiges of its ancient and important manufactures, in which John Winschomb, commonly called Jack of Newbury, rose to as great a celebrity as that claimed by the inhabitants of Reading for

Bristol, £35,711; Birmingham, £32,474; Leeds, £23,343; Hull, £16,089; Cork, £13,816; Sheffield, £12,929; Belfast, £11,578; Norwich, £10,199; Aberdeen, £9,612; Nottingham, £9,456; Dundee, £9,430; Limerick, £7,393; Potteries and Newcastle (Staffordshire), £7,203; Leicester, £7,075; Preston, £5,673; Coventry, £5,029.

their famous clothier Thomas Coole, or Thomas of Reading. The little town of *Wantage*, situate in the centre of the western portion of the county, is remarkable as as being the birth-place of Alfred the Great. Immediately to the west of Wantage is the fruitful valley called *White-horse Vale*, which derives its name from a gigantic figure of a horse rudely marked on the face of a chalk hill, and which is preserved with great care by the country people. The towns of *Wallingford*, *Abingdon*, *Maidenhead*, and *Oakingham*, are engaged to some extent in the malt trade. *Windsor*, 22 miles from London, is a considerable town, with a bridge over the Thames; but is chiefly remarkable for its magnificent castle, the chief residence of the sovereigns of England. The castle is built on an eminence, which rises gradually above the town and the river, and forms a commanding feature in the prospect for many miles around. The castle was almost entirely renewed, and received its present form and appearance in the reign of George IV. The principal part of the edifice consists of the central tower or keep, and two wards or courts, surrounded externally by terraces raised to a considerable height. The apartments are in the highest degree elegant, and superbly furnished. St. George's Chapel, a fine Gothic structure, which stands at the west side of the castle, was repaired and embellished by George III, who likewise built within it a mausoleum for himself and family, where the remains of three kings, one queen, and several princes and princesses are already deposited. Attached to the castle are two parks—the little park, between it and the river, and the great park, at some distance to the south, but connected with the castle by a long avenue. The great park contains 3,800 acres, and an artificial lake of considerable size, called Virginia water, which was formed and embellished by George IV, and presents some very picturesque scenery. *Sandhurst*, situate near the junction of Berkshire, Hampshire, and Surrey, is the seat of the Royal Military College.

§ 4. *Buckinghamshire, or Bucks.*

Aylesbury, situate in the middle, and *Buckingham* in the north-west of Buckinghamshire, are its two county towns, and in the early periods of English history were places of some importance. The only branch of industry followed in either is the manufacture of thread lace, of which article a greater quantity is made in Buckinghamshire than in any other county. The ancient towns of *Great* or *Chipping Marlow*, *High* or *Chipping Wycombe*, and *Amersham*, situate in the south of the county, are all connected with the lace-trade; but many of their inhabitants find employment in the numerous paper-mills that have been erected in their several vicinities. The principal object of a public character in this county is *Eton College*, founded in 1440 by king Henry VI., for the maintenance and education of a certain number of boys. It has now become the principal classical school in Britain for the sons of the nobility and higher gentry; the number of pupils amounting to between three and four hundred. The chapel is a fine specimen of the Gothic architecture of the age in which it was erected. Eton is situate on the north bank of the Thames, opposite to Windsor, and is celebrated for the beauty of the valley in which it stands, the flourishing state of its endowments, and the number of eminent men who have there received their education. North of Windsor bridge is *Slough*, distinguished as having been formerly the residence of the elder Herschel, the astronomer. Near the town of Buckingham is *Stowe*, the splendid residence of the Duke of Buckingham, celebrated for its fine grounds, and its collection of pictures and statues. Cowper the poet had his residence in the neighbourhood of the little market-town of *Olney*, in the north-east of the county. *Hartwell*, in the vicinity of Aylesbury, was the asylum of Louis the Eighteenth of France, during the greater part of his exile.

§ 5. *Cambridgeshire.*

Cambridge, the county town, is built on the right bank of the river Cam, in an extensive, but not very fertile plain, and, in point of situation, is considered to be very salubrious. The river is navigable to the Ouse, and communicates with the sea by the port of Lynn. Neither the streets nor private buildings are remarkable for their neatness and elegance; but the recent additions and embellishments which the colleges have undergone, have contributed materially to the improvement of the town. Cambridge is chiefly remarkable for its University, which is a corporation of itself, and sends two representatives to parliament, who are elected by a body of upwards of twelve hundred voters, consisting of the doctors and masters of arts. The University consists of seventeen colleges and halls,* which were erected and

* The following are the names of the several colleges and halls:—1. *St. Peter's College*, founded in 1284 by Hugh de Balsam, Bishop of Ely; 2. *Clare-Hall*, first founded by Richard Badew or Badow in 1326, and afterwards rebuilt by Lady Clare; 3. *Pembroke-Hall*, founded in 1363 by Mary Countess

endowed at various times. Each of these is a separate corporate body, possessing the buildings and libraries, and enjoying large funds, from which the expenses of the establishment, and the salaries of the officers, fellows, and scholars, are defrayed (see *anté*, p. 195.) They have each a separate chapel, library, and hall, with apartments for the use of the members of the college. They have also tutors, who conduct the education of the students, and officers, whose duty it is to maintain due discipline. Besides the public tutors, there are also in each college private tutors, of whose services the more aspiring pupils generally avail themselves. These minor corporate bodies are, however, all subject to the general corporation and government of the University, at the head of which is a chancellor, generally a nobleman of high rank, who has been educated at the University; but whose ordinary duties are performed by a vice-chancellor, and other subordinate officers. In addition to the tutors of colleges, there is a number of public professors and lecturers on the establishment of the University. The number of members on the books in 1837 was 5527. The principal literary and scientific establishments connected with the University are the two public libraries; the Fitzwilliam museum, bequeathed, together with a munificent endowment for its support, by Viscount Fitzwilliam in 1816; the valuable collection of ecclesiastical history gifted to Corpus-Christi college by Archbishop Parker; the astronomical observatory; and the botanic garden. The public buildings of Cambridge are considered, on the whole, inferior in point of architectural magnificence to those of Oxford; yet they include some of the works of Wren and Inigo Jones, and the chapel of King's College is correctly deemed one of the most perfect specimens of gothic architecture to be seen in England. The gardens and walks attached to the different colleges are unrivalled in beauty. *Ely*, situate 17 miles to the north of Cambridge, is a small episcopal city, with a fine cathedral, a free grammar-school, and two charity-schools. *Newmarket*, a small town situate partly in Suffolk, is noted for its race-course, which is reckoned the finest in England. *Wisbeach*, a well-built town, situate on the river Nene, in the north-east of the Isle of Ely, is the only port in the county; its trade, which is considerable, consists chiefly in corn, butter, timber, coals, and wine. Cambridgeshire is strictly an agricultural county, almost the only semblance of manufactures which it possesses being limited to the fabrication of coarse pottery. One of its most remarkable districts is the *Isle of Ely*, situate to the north of the river Ouse, and forming part of a vast marshy plain extending into six several counties, the draining of which was successfully begun, during the protectorate of Cromwell and the reign of Charles the Second, by William Duke of Bedford, from whose title the whole tract has received the name of the *Bedford Level*. In the laborious process of reclaiming these fens, the resources of modern skill have been advantageously brought to aid the ruder efforts made in the infancy of engineering science. By substituting the constant power of the steam-engine for the uncertain agency of the windmill in the operation of draining, land that till lately bore only precarious crops of oats and rape-seed, now produces the finest wheat grown in England.

§ 6. *Cheshire.*

Chester, the county town and also the see of a bishop, is situate on the Dee, about six miles from where the river, after flowing for that distance through a partly artificial bed, falls into an estuary of the Irish channel. Two bridges, one of which consists of only one arch of 200 feet span, connect the city and county with Flintshire. The city bears many marks of high antiquity, and in the distribution of its streets, retains ample proofs of having been occupied by the Romans. Many of the houses are very old, with projecting galleries which overhang the pavement of the streets. The ancient walls are still in good preservation, and afford to the inhabitants an agreeable promenade of nearly two miles in circuit. The cathedral is plain, but the chapter-house is an object of general admiration. Chester is the only sea-port in the county. It was once one of the most flourishing ports on the western coast, and the principal

of Pembroke; 4. *Corpus-Christi College*, begun in 1341 by two societies or guilds, and completed by Henry Duke of Lancaster in 1356; 5. *Caius' College*, originally founded by Edward Gonville, a divine, and afterwards endowed by Dr. Caius, physician to Queen Mary; 6. *King's College*, founded by Henry the Sixth; 7. *Catherine-Hall*, founded in 1745 by Robert Woodlark, chancellor of the university; 8. *Jesus College*, originally a convent of Benedictine nuns, which was suppressed by Henry the Seventh; 9. *Christ's College*, founded by William Bingham, a London divine, in 1442, rebuilt on its present site by Henry the Sixth, and further endowed by the Countess of Richmond, mother of Henry the Seventh; 10. *St. John's College*, founded also by the Countess of Richmond; 11. *Trinity College*, founded by Henry the Eighth; 12. *Emanuel College*, founded in 1548 by Sir Walter Mildmay, a privy counsellor to Queen Elizabeth; 13. *Sidney-Sussex*, founded in 1590 by the Countess of Sussex; 14. *Magdalen College*, founded by a Norman baron in 1092; 15. *Queen's College*, founded in 1448 by Margaret of Anjou, the consort of Henry the Sixth; 16. *Trinity-Hall*, founded as a college, in 1351, by Bishop Bateman; 17. *Downing College*, first opened to students in 1821, founded on a reversion of valuable estates bequeathed for that purpose by Sir George Downing, who died in 1749.

seat of the trade in Irish linens, now transferred to Liverpool. Its exports at present are, salt, copper, and other minerals, and vast quantities of cheese, of which not less than 11,500 tons are annually made in the county. The making of gloves forms the principal branch of industry in Chester. *Macclesfield*, in the north-eastern portion of the county, has risen into considerable importance from its thriving silk manufactures, and although situate in the immediate vicinity of a wild and dreary tract, is, next to Stockport, the most populous place in Cheshire. The silk trade was also formerly carried on to a great extent at *Stockport*, on the Mersey, but it has now given place to the cotton manufactures. *Runcorn*, on the Mersey, at the entrance of the Duke of Bridgewater's Canal, has become of some note as a trading place; and a new town and docks have been formed at *Birkenhead*, opposite Liverpool.

§ 7. *Cornwall.*

Launceston, the county town, stands on a gentle elevation, overlooking the river Tamer, with which it is connected by a little stream called the Atterly. *Falmouth*, the principal station of the post-office packets for the Mediterranean, West Indies, and America, is situate on the shore of a fine harbour, exactly 5° or 273 miles from London. It has also a considerable trade in the pilchard fishery. In its vicinity is *Pendennis Castle*, which was built by Henry VIII., improved by Elizabeth, and greatly strengthened by Cromwell. *Penzance* is the most westerly town in England, and much resorted to by invalids, on account of the extreme mildness of its climate. Falmouth and Penzance are the two principal sea-ports in this county. The ports of less importance are *Fowey*, on the west bank of the river of that name; *Gweek*, on the river Hel, which falls into the English channel to the east of the town of Helston* and the south of Falmouth harbour; *St. Ives*, on the south-western side of the bay of that name; *Padstow*, on the south side of the spacious opening or harbour, into which the river Camel falls; and *Truro*, situate at the confluence of the Kenwyn and the St. Allen, two little streams which flow into Falmouth harbour. There is a custom-house in the small town of *Heugton* or *Newton*, in St. Mary, the largest of the Scilly islands. As Cornwall derives its wealth and importance almost exclusively from mining operations, it cannot boast of many other branches of industry. There are, however, some paper-mills on the streams near *Hayle*, a village in the vicinity of St. Ives (of the port of which it is a custom-house dependency), and remarkable for its extensive smelting-works; carpets are made at *Truro*, and coarse woollen stuffs at *Callington*, *Launceston*, *St. Austle*, *Bodmin*, and other towns. The present *stannary* towns, or those to which the miners are obliged to carry their blocks of tin to be stamped by the proper officers are, — Launceston, Lostwithiel, Truro, Helston, and Penzance.

§ 8. *Cumberland.*

Carlisle, an episcopal city and also the county town, situate at the confluence of the river Eden with the Caldew, was anciently surrounded by walls, which have mostly fallen to ruin and been removed. Some of the streets are spacious, and contain good houses; and the city is adorned with numerous public buildings, of which the castle, originally built by William Rufus, the cathedral, and St. Cuthbert's church, are the most conspicuous. There is also a fine stone bridge across the Eden, nearly a quarter of a mile long. Carlisle is a place of great antiquity, having been employed as a British station previous to its occupation by the Romans. Its position as a border city exposed it to various reverses of fortune, and it is only since the commencement of the present century that its prosperity has been allowed to advance unchecked. Various branches of the cotton trade are carried on in the city; there is also an export trade in Irish linens; and several iron-works have been established. Carlisle communicates with the sea by a canal 11¼ miles in length, terminating at Bowness, on the Solway Firth; and its trade as a port must have greatly increased since the completion of the railway which connects it with the town of Newcastle. The Roman wall passes by Carlisle a little to the north, and in the vicinity of the town there are some remarkable druidical monuments particularly that called Long Meg and her daughters. *Whitehaven*, a large town, situate in an important mining, and to some extent manufacturing, district, possesses an excellent harbour, and besides carrying on an extensive trade with Ireland, Scotland, and the west coast of England, has a considerable commerce with the West Indies, and is largely engaged in ship-building. *Workington* is also a large and populous town, with a commodious harbour, and carries on a considerable trade in coal and iron, the produce of the mines. Workington and the neighbouring town of *Maryport*, together with the vil-

* *Helston* is situate on the river Cober, the mouth of which being obstructed by a great bank thrown up by the action of the sea, the stream expands into a remarkable lake named the *Loo-Pool*.

lage of *Harrington*, are custom-house dependencies of the port of Whitehaven. The inland towns are of little importance: *Cockermouth*, on the Derwent, manufactures hats, shalloons, coarse woollen, and linen; several cotton works have been erected at the romantic town of *Keswick; Penrith* possesses some trade in fancy woollen stuffs; and the inhabitants of *Wigton* are employed in the manufacture of cotton. The famous plumbago mine, to the excellence of the material derived from which the English pencils owe their superiority, is situate on the side of Seatallor-Fell in Borrowdale, about eight miles south from Keswick.

§ 9. *Derbyshire.*

Derby, the county town, is situate in a beautiful and fertile valley, watered by the Derwent, which is navigable to the Trent. It includes five parishes, whose respective churches are the chief ornaments of the town. The houses are well built, the market-place forms a fine square, and the town hall, assembly room, and the church of All Saints, are respectable edifices. The first silk-mill in England was erected here, and still continues to prepare the raw material for the subsequent processes of the manufacture. Derby was once famous for its fine china or porcelain, which is now in a great measure superseded by that manufactured at Colebrook-dale, but there is still a china-work where beautiful ware is produced. The cotton trade, especially in hosiery, furnishes employment to numerous persons. There are also many engaged in the manufacture of jewellery, and small articles of gold and silver. In the north of the county, the small but thriving town of *Chesterfield*, situate on the Rother, is noted for its silk and cotton works; several potteries and iron-founderies have been established in the vicinity of the town; and by its canal the produce of the neighbouring lead and coal mines are conveyed to the Trent. The fashionable watering places, *Buxton* and *Matlock*, the former situate in the south-west of the district of the High Peak, the latter eight miles south-east of the market town of *Bakewell* in the same district, have long been celebrated for their mineral springs. The heat of the Buxton water is 82°, and is not affected by the varying temperature of the atmosphere. The water is remarkably pure, and very slightly impregnated with saline particles. It is used for both bathing and drinking, and is chiefly recommended for gout, rheumatism, derangement of the biliary and digestive organs, &c. The Matlock water is not so warm as that of Buxton, being seldom more than 68°. It is also pure, but less impregnated with mineral substances than that of Buxton. There are likewise mineral springs at *Bakewell* above mentioned, *Stony Middleton*, and *Keddleston;* and a chalybeate spring at *Quarndon*, three miles from Derby, which is much celebrated. At *Barmoor*, near *Tideswell*, in the High Peak district, is an intermitting spring called the ebbing and flowing well. *Tunsted*, near the village of Wormhill, about three miles south of Tideswell, was the birth-place of James Brindley, the celebrated engineer, to whose contrivance and skill almost all the great canals of England owe their existence. *Chatsworth*, the splendid mansion of the Duke of Devonshire, is situate on the Derwent, three miles to the east of Bakewell. The abundant supply of gypsum derived from the quarries in the neighbourhood of *Chellaston*, five miles south of Derby, and the marble quarries of *Aston*, about six miles N.N.E of Tideswell, have given these places, although otherwise of no great note, considerable importance. *Bolsover Moor*, about nine miles east of Derby, yields a remarkably fine magnesian limestone or dolomite, which in all likelihood will, agreeably to the recommendation of the Parliamentary Commission, be used in the construction of the new buildings for the accommodation of the Imperial Parliament. The north-western part of the county, or the High Peak district, consists of mountains and moors, and is famous for its caverns, of which the most celebrated is that near *Castleton.*

§ 10. *Devonshire.*

Exeter, an episcopal city, also the capital of the county, stands on the slope of a rising ground on the east bank of the Exe. The city, though small, contains numerous public buildings, among which are the cathedral, a large and magnificent structure of great antiquity, eighteen other churches, the bishop's palace, a session's house, a county gaol, an hospital, guildhall, and theatre. Over the Exe is an elegant stone bridge; and there is a custom-house on the quay, at which vessels of 150 tons can unload. The distance from London is 173 miles. *Plymouth* is an ancient town, with narrow, steep, and inconvenient streets, at the mouth of the Plym. *Devonport*, formerly called Plymouth-dock, stands on the east side of the mouth of the Tamer, where it expands into the noble estuary of *Hamoaze*. It has grown up into a large town round the royal dockyard, to the westward of Plymouth, and between them is a straggling town named *Stonehouse.* These are all situate on Plymouth

sound, and derive their importance chiefly from being a principal station of the royal navy. *Exmouth*, about 10 miles below Exeter, has some trade, chiefly in fish, but is better known as a favourite resort for sea-bathing. *Ilfracombe*, on the north coast of Devon, has a well-built pier, and contains some good houses, and a large but plain-looking church. It possesses a natural harbour, completely sheltered against storms, and capable of receiving ships of 230 tons burden. Plymouth, and Exeter (with its subport *Teignmouth*) are the principal sea-ports in the county. The less considerable ports are *Barnstaple*, on the eastern bank of the river Taw; *Bideford*, on the river Towridge, a little above its union with the Taw; and *Dartmouth*, on the western bank of the river Dart, near where it falls into the Channel. Ilfracombe, to which we have already alluded, is also a port.

§ 11. *Dorsetshire.*

Dorchester, the county town, is a place of great antiquity, but of no modern importance. *Weymouth*, a place of some trade, stands on the western bank of the river Wey, opposite to the town of *Melcombe Regis*, with which it is united by a fine bridge built of stone. *Poole*, a large seaport, with 6000 inhabitants, and carrying on a considerable trade, is situate on the north side of a deep bay formed by the projection of the sort of peninsula incorrectly named the Isle of Purbeck. *Bridport*, on the south-west coast, is noted for ship-building. *Lyme*, or *Lyme Regis*, has a good harbour, which has been constructed at a considerable expense, and the town is much frequented for sea-bathing. Weymouth, Poole, Bridport, and Lyme, hold the rank of ports.

§ 12. *Durham.*

This county was formerly a county palatine, the government of which was vested in the bishop; but in 1837 the supremacy was annexed to the Crown, the palatine courts abolished, and the bishop restricted to his ecclesiastical functions and authority. The city of *Durham*, the capital of the county, is situate nearly in the centre of the latter, on a rocky eminence, almost surrounded by the river Wear, over which there are three bridges. The streets are steep, narrow, and inconvenient. The principal public buildings are the cathedral and the castle or palace, both built on a lofty rock, which is washed by the Wear on the western side. The cathedral is a majestic edifice of great antiquity, and contains the once venerated remains of St. Cuthbert. A college, principally for the education of clergymen for the Church of England, was founded here in 1832 by the bishop and chapter, and incorporated by royal charter in 1837, under the name of the University of Durham. *Sunderland*, *Monkwearmouth*, and *Bishopwearmouth*, form one town, at the mouth of the Wear, over which there is a stupendous iron bridge, consisting of a single arch, 236 feet span, and of such a height as to allow vessels of 400 tons to pass beneath, with only their top-gallant masts lowered. The principal trade of the town is in coals and lime; about 1,000,000 tons of the former, and 40,000 tons of the latter, being annually exported from the Wear. There are also several extensive manufactories of salt, glass, earthenware, ropes, sailcloths, and chain-cables. There are 30 yards for building large ships, five for small craft; four dry, and four floating docks. *South Shields*, at the mouth of the Tyne, is a flourishing seaport, which participates to a great extent in the commerce of Newcastle. *Gateshead*, an ancient borough on the Tyne, opposite Newcastle, with which it is connected by a handsome stone bridge. *Stockton-upon-Tees* is one of the handsomest towns in the north of England, and is situate at the mouth of the Tees, over which there is a bridge of five arches. It carries on a considerable foreign trade, and contains manufactories of sailcloth, ropes, damask, diaper, huckaback, and linen. Stockton is connected by a railway with *Darlington*, also on the Tees, where the great north road from London crosses the river by a bridge of three arches. *Hartlepool* is a small seaport town on a peninsula to the north of Teesmouth. In north Durham, the only place of note is *Norham*, a small town on the Tweed, seven miles above Berwick, with the remains of a magnificent castle, celebrated in the border wars of England and Scotland. The inland towns in this county are of no considerable importance. *Bernard Castle*, on the Tees, may be mentioned on account of its great corn-market. *Bishop Auckland*, on the Wear, derives its consequence from its episcopal palace, the principal residence of the bishops of Durham. The only seaports in the county are Sunderland and Stockton.

§ 13. *Essex.*

Colchester, a large town on the north bank of the Colne, about three miles in circumference, and divided into twelve parishes. The inhabitants are employed in the

manufacture of baize, serge, and silk stuffs. A large portion of the trade of the town arises from the fishery of oysters, which have long been celebrated for their richness and flavour, and are exported to London in immense quantities. *Harwich*, a small burgh at the north-eastern extremity of the county, has a harbour so capacious as to admit 400 ships at the same time. The inhabitants are employed chiefly in ship-building, fishing, and in the service of the packets which sail between this port and the opposite continent. *Maldon* is an ancient burgh, at the confluence of the Black-water and the Chelmer. *Chelmsford*, situate at the confluence of the Chelmer and Essex Cam, near the centre of the county, is the county town, where the assizes and quarter-sessions are held. The county-hall, assembly-rooms, jail, church, and many elegant private houses, are the chief ornaments of the town, which is rendered still more agreeable by the beauty of the surrounding country. *Tilbury Fort*, on the Thames, opposite Gravesend, was built by Henry VIII., enlarged into a regular fortification by Charles II., and is mounted with heavy guns for the defence of the river. *Purfleet*, also on the Thames, is the great depôt of gunpowder for the use of the government; chalk is extensively quarried in its vicinity. *Epping*, on the east bank of the Lea, near London, is celebrated for its butter, and for the royal forest, where the citizens of London enjoy the privilege of hunting a buck on Easter Monday—an amusement of which many inhabitants of the metropolis avail themselves. *Waltham Abbey*, a thriving market-town, built near the junction of Essex with Hertford and Middlesex, derives its name from a magnificent ecclesiastical structure now in ruins. A little to the west of the town, but on the Hertford side of the Lea, is a beautiful monumental cross, erected by Edward the First to the memory of his wife Eleanor. We mention *Dunmow*, a market-town situate about thirteen miles to the north-west of Chelmsford, on account of the singular and well-known ancient manorial custom of the "Delivery of the Flitch of Bacon," which has been long kept up in the neighbouring parish of *Little Dunmow*. Essex was at one time celebrated for its woollen manufactures, almost the only remaining portion of which are some branches of the cloth trade carried on at *Cogges-hall*, *Braintree*, and *Boeking*, on the river Black-water. There are four sea-ports in this county, viz. Colchester, Maldon, and Harwich, which have been already noticed, and the little seaport of *Leigh*, situate at the mouth of the Thames, opposite to the eastern point of Canvey Island.

§ 14. *Gloucestershire.*

This important county is naturally divided into three very different districts, namely, the *Cotswold*, a high and bleak tract on the east of the county, the fertile *Vale of the Severn*, in the middle, and the *Forest of Dean*, abounding in coal and iron, on the west. Numerous flocks of sheep are reared in the first of these districts, and the rich pastures of the Vale furnish the cheese for which Gloucestershire is so celebrated, and of which 12,000 tons are annually exported. *Gloucester*, an ancient and fine city, the capital of the county, and, jointly with Bristol, the see of a bishop, stands on the eastern bank of the Severn, and, by the arrangement of its four principal streets, presents sufficient evidence of its Roman origin. Its distinguishing feature is its cathedral, which is one of the noblest structures of the kind in England. Favoured by the command of the Severn Navigation, and a connection with the canals of Stroud-water and Berkley and Gloucester, this city carries on a considerable trade. It has been long celebrated for its manufacture of pins, and a foundry for the casting of bells for churches and other public edifices. The celebrated George Whitefield was a native of this city; and we have elsewhere mentioned (*antè*, p. 195), that it was here that Robert Raikes, the original contriver of Sunday-school instruction, first carried his benevolent efforts into effect. *Bristol*, a commercial city of great antiquity, is healthily situate on the north side of the Lower Avon, in the midst of a fertile country, surrounded by verdant hills. The city, including the suburb of Bedminster, in Somersetshire, to the south of the Avon, is nearly eight miles in circumference, and is supposed to cover 1,600 acres. It contains 750 streets, squares, and lanes, ten markets, seventeen churches, and five chapels. Bristol, along with Gloucester, although second in point of precedence, gives a title to a diocese. The cathedral, originally the church of an Augustin monastery, consists of a neat Gothic choir, with part of the nave and two side-aisles, all of equal height; but the principal ecclesiastical building in this city is the beautiful church of St. Mary Redcliffe, the tower of which is nearly 200 feet high. The public schools and educational societies are numerous and flourishing; and the city contains many hospitals, almshouses, and other charitable institutions. The principal manufactories are those of sugar, iron, brass, copper, lead, zinc, floor-cloth, glass bottles, and earthenware;

but the heavy amount of the local taxation operates as a serious check to the manufactures, as well as the general trade of the city. Bristol nevertheless carries on a considerable foreign trade, chiefly with the East and West Indies and America; and also an extensive home traffic with the western counties and North and South Wales. The public works connected with the port of Bristol are among the most extensive of the kind in England, and perhaps in the whole world. The quay, which is built of hewn stone, presents a wharf upwards of a mile in length; and a large floating harbour, capable of accommodating vessels of 1000 tons burthen, has been formed by damming up the bed of the Avon, and its northern tributary stream the Frome, and cutting a new bed for the former. *Clifton*, a little to the west of Bristol, of which it may be considered a fashionable suburb, is celebrated for its romantic scenery. It was first brought into notice about the close of the 17th century, in consequence of its hot springs, which are supposed to be peculiarly efficacious in cases of debility or consumption. To facilitate the communication between the city and Clifton, a magnificent suspension-bridge, the works of which are now in progress, is to be thrown across the bed of the Avon, at such a height above the level of the tides, that vessels of the largest class will be able to pass underneath the arch without lowering their topmasts. *Cheltenham*, which derives its chief importance from its mineral waters, occupies a pleasant situation in an amphitheatre formed by the Cotswold hills. One of the wells is chalybeate, the other sulphurous; and both are resorted to by great numbers of invalids, for whose amusement there is a spacious assembly room, and an elegant theatre. *Stroud*, situate near the confluence of the Frome and the Sladewater, and on the line of canal navigation which extends between the Severn and the Thames, is the centre of a considerable cloth manufacture. The same manufacture is also carried on at *Wotton-under-Edge*, and at *Dursley*, a few miles to the south-west of Stroud. The ancient town of *Tewkesbury*, situate near the confluence of the Avon with the Severn, carries on, besides a considerable inland trade, several branches of manufactures, especially in stocking frame-work knitting, in nail-making, and in tanning and malting. The market-town of *Cirencester*, situate on the Churc, was a place of considerable importance when the Romans were in possession of Britain, but is now little better than a mere village. *Berkeley*, a small but thriving town, and the centre of the traffic in the dairy produce of the beautiful vale of that name, bordering on the Severn, deserves to be mentioned as the birth-place of the celebrated Jenner, who first introduced vaccination into medical practice. *Berkeley Castle*, near the mouth of the Severn, is an ancient baronial mansion of the Earls of Berkeley, where the inhuman murder of King Edward II. was perpetrated in 1327. On the eastern border of the county, about 14 miles E.N.E. of Bristol, and 7 from Malmesbury, is *Badminton house*, the chief seat of the Duke of Beaufort, one of the finest of the ducal mansions of England. Bristol and Gloucester are the only sea-ports in this maritime county.

(*Hampshire* or *Hants*—see *Southamptonshire.*)

§ 15. *Herefordshire.*

Hereford, an ancient and episcopal city, the capital of the county, is situate on the northern bank of the Wye. Its cathedral, built after the model of that of Aix-la-Chapelle, is greatly admired for the lightness and elegance of its details. The other principal buildings are the bishop's palace, college, shire-hall, theatre, gaol, and some hospitals. The trade of the place is in cider, hops, and tanner's bark; its manufactures are trifling, and are limited to those of gloves, flannels, and hats, the first of which, however, was formerly carried on to a great extent. *Leominster*, on the Lugg, a tributary of the Wye, and *Ledbury*, on the Leddon, which falls into the Warwickshire Avon, carry on some trade in wool, cider, hops, and malt; but most of the manufactures in which these towns were formerly engaged are now removed to other places. In the south of the county, and situate in the valley of the Wye, is the little town of *Ross*, well known as the native town of John Kyrle, the 'Man of Ross,' whose benevolence and public spirit are celebrated in Pope's well-known poem.

§ 16. *Hertfordshire.*

Hertford, a town of Anglo-Saxon origin, and the capital of the county, derives its commercial prosperity from its situation on the Lea Navigation. Its ancient castle was the scene of the captivity of two crowned heads, namely, John, King of France, and David the Second, of Scotland. At *Haileybury*, about two miles and a half to

the south of Hertford, the East-India Company's celebrated college was established in 1806, for the education of young men destined to fill offices in the civil departments in the government of India. There is also in the town of Hertford a branch of Christ's Hospital, London, where about 500 of the younger children of that institution are kept. *St. Albans*, an ancient town, near the Roman *Verulamium*, has an abbey church, which contains the tomb of the celebrated Francis Bacon, Viscount St. Albans, and Baron Verulam. *Ware*, a little to the east of the county-town, is noted for its trade in malt. At *Tring* and *Watford*, both situate on the line of the Grand Junction Canal, there are several silk throwsting-mills; and a portion of the female population of these towns, and that of several other places of the county, find a profitable employment in the manufacture of straw-plait. *Chipping-Barnet*, or *High-Barnet*, situate near the borders of Middlesex, is noted for its cattle-fairs.

§ 17. *Huntingdonshire.*

The ancient town of *Huntingdon*, the capital of the county, is situate on the Great Ouse, and carries on a trade in corn, flour, and malt. It was the birth-place of Oliver Cromwell. *St. Neots* and *St. Ives*, also situate on the Ouse, the former near the borders of Bedfordshire, the latter near those of Cambridgeshire, are inconsiderable in point of population, and with the exception of the manufacture of paper carried on at St. Neots, equally so with regard to trade. The parish of *Stilton*, in which is a small market-town of the same name, situate in the northern portion of the county, has long been celebrated for the quality of its cheese; but much of the article sold under the name of "Stilton cheese," is made in Leicestershire and Rutlandshire.

§ 18. *Kent.*

Canterbury, the ecclesiastical metropolis of England, stands on the river Stour, in a valley covered with hop grounds and plantations, at the distance of 57 miles from London. The streets are well paved and lighted, but the houses are generally of an inferior description. The cathedral, a large and magnificent building, is of great antiquity, and contains many handsome monuments, the principal of which are those of St. Thomas-a-Becket, and Edward the Black Prince. Canterbury was a place of considerable importance in the time of the Romans, and was subsequently the capital of the Saxon kingdom of Kent. *Rochester*, 29 miles from London, is built on the west bank of the Medway, over which there is an ancient stone bridge. The city, which is episcopal in rank, is small but handsome, and possesses a fine cathedral, and an ancient castle, still in good preservation. *Chatham*, on the opposite, or east side of the Medway, may be said to form a continuation of Rochester. It has an extensive dockyard, which affords accommodation for the largest ships of the royal navy; barracks for the royal marines, and regimental depots. The fortifications, which are extensive and of great strength, are inferior only to those of Portsmouth. *Maidstone*, the county town, on the Medway, about 8 miles above Rochester, is handsomely built, and forms the centre of the hop trade. The principal buildings are the parochial church, which is one of the largest in the kingdom, the county jail and the shire hall, where the assizes are held. *Dover* is situated on the south-east coast, at the mouth of a romantic valley nearly surrounded by chalk hills, and is 71 miles distant from London. The town is large and handsome, and the castle, perched on the summit of Dover Cliff, is one of the strongest and best appointed fortresses in the kingdom. The harbour, though not very good, is large and commodious, and is principally used for the packets between England and France. Dover, Hastings, *Romney*, *Hythe*, and *Sandwich*, are called by way of eminence the *Cinque* (five) *ports;* and formerly enjoyed considerable privileges on account of their maritime importance in former ages. They, along with their dependencies, are still under the special charge of a "Lord Warden," whose official residence is at Walmer Castle, near Deal. Hastings belongs to Sussex, the others are on the south-east coast of Kent. *Woolwich*, on the south side of the Thames, 10 miles east of London, the head quarters of the royal artillery and engineers, is a royal arsenal, and has a dock-yard, where ships of the largest class are built for the royal navy. *Deptford*, likewise on the south bank of the Thames, contiguous to, and forming virtually a part of London, possesses another royal dockyard, established by Henry VIII., and a corporation called the Trinity House, founded in 1515 by Sir Thomas Sport, comptroller of the navy. This corporation has in process of time acquired large property; and is now entrusted with the power of examining and nominating pilots, superintending the lighthouses, buoys, and landmarks, on the coasts of England, regulating the ballasting of ships in the port of London, examining masters of the royal navy, and superintending the mathematical studies of

the youths in Christ's Hospital. The corporation now consists of a master, four wardens, eight assistants, and 18 elder brethren; but, though they still retain their old house at Deptford, where they have an hospital for decayed shipmasters and their wives, their business has been transferred to an elegant building on Towerhill, London. *Greenwich*, continuous with, and on the east side of Deptford, is celebrated for its observatory and royal naval hospital, an asylum for disabled and aged seamen and marines of the royal navy. The hospital stands on the bank of the Thames, a little to the south-east of London, and is a magnificent structure of stone, surmounted by two domes, which are the first prominent objects that attract the attention of travellers when entering London by the river. On an eminence behind the hospital is the Royal Observatory, the point from which the meridians are reckoned by British geographers and navigators. *Sheerness*, a fortified place on Sheppy Island, at the mouth of the Medway, contains a royal dockyard, and extensive docks for building ships of the line. It is also a market town, and contains some good houses. *Margate*, the great resort of the inhabitants of London for sea-bathing, stands on a bay in the isle of Thanet, to the west of the north Foreland. The streets are irregular, but the town contains several handsome squares and elegant buildings, of which the most conspicuous are the assembly rooms, theatre, and public libraries. *Ramsgate*, another sea-bathing station, stands on the east coast of Thanet, and has an excellent harbour, which was formed at a vast expense. *Gravesend*, a considerable town, 24 miles from London, opposite Tilbury Fort, is considered as the termination of the port of London, and is the great rendezvous for outward bound ships. The present out-ports of this important maritime county are five in number. The principal of these are Dover (of which the neighbouring town of *Folkstone* is a sub-port), Rochester, and Ramsgate. The others are *Faversham* and *Deal;* the former of which, and its sub-port *Milton*, stand on creeks opening out into the channel of the Swales, and the latter faces the anchorage of the Downs. The inland towns of Kent, independently of those already noticed, are few and inconsiderable. *Tunbridge*, a very neat town, is delightfully situate in an extensive tract on the banks of the Medway. The hamlet named *Tunbridge-Wells*, situate partly in the parish of Tunbridge, and partly in that of Frant in Sussex, is celebrated for its mineral waters, and has long been a place of fashionable resort in summer.

§ 20. *Lancashire.*

Lancaster, an ancient town, derives its chief importance from its being the capital of the county. It is beautifully situate on a rising ground, the summit of which is occupied by the castle and the church. The river Lune flows on the north of the town, and is crossed by a magnificent bridge. *Manchester*, the centre of the great cotton manufactures of England, stands on the river Irwell, in the south-east quarter of the county, 182 miles north-west of London. The ground on which it is built is nearly a dead level; and from whatever side it is approached, a crowded assemblage of spires, towers, factories, and warehouses, is seen rising with the cloud of smoke which almost continually envelopes it. The houses are generally built of brick, and covered with blue slates. The streets are well paved; and the public buildings and charitable institutions bear testimony at once to the wealth and the misery of the inhabitants. The collegiate church of St. Mary is an ancient Gothic structure, which will probably become the cathedral of the new bishopric of Manchester. This town owes its present greatness to the skill and enterprise with which its manufactures have been conducted. Every branch of the cotton manufacture is carried on in the town and neighbourhood to an enormous extent. Iron and brass founderies are also numerous, as well as chemical works, and a great variety of other branches of industry, either connected with the cotton trade, or required for the comfort and accommodation of its numerous population. The situation of Manchester, in an extensive coal-field, amidst streams of considerable power, which have been rendered still more powerful by the artificial canals formed from them, and its freedom from corporate privileges, have contributed not a little to raise it to the pre-eminence which it now enjoys. The town was incorporated for municipal purposes in 1838, and is now governed by a mayor, aldermen, and council, elected by the qualified Parliamentary voters. In the year 1757 the population of Manchester amounted to 19,600; in 1800 to 84,000; and in 1831 to 187,000. *Salford*, on the west side of the Irwell, is a considerable town, almost continuous with Manchester, but not included within its municipal limits. The two towns communicate with each other by means of three stone bridges. *Liverpool*, next to London the largest sea-port in the kingdom, is situate on the north-east bank of the Mersey, near its mouth, 32 miles west of Man-

chester, with which it is connected by a railway.* The Mersey affords good anchorage to any number of vessels; but the entrance is much obstructed, and rendered difficult by sandbanks. The town extends three miles along the shore, and more than one mile inland. The docks, wharfs, and warehouses, form one stupendous range along the river side. The first dock was opened in 1690, and from that time the amount of dock-accommodation has continued to increase till the present day, when the docks are now so extensive as to contain a total area of water of 111 acres, with a broad quay space nine miles and eighty-three yards long. The extreme length of the river wall, when completed, will be three miles and 1087 yards. The streets are well paved, generally spacious and airy, and many of them elegant. The public buildings are numerous and splendid. The principal of them are the Town-hall, the Exchange, and the new Custom-house — three extensive and magnificent buildings, the last of them built on the site of the old harbour. Liverpool is a burgh, governed by a mayor, alderman, and council, and may be regarded as entirely a commercial town, every other pursuit and branch of business being subservient to trade. Its principal commerce is with the United States of North America, the most important branch of which is the importation of cotton. Besides America, however, the ramifications of its trade extend to India, China, and every other part of the world, from all of which it imports materials for the manufactures of Lancashire, and exports them again in their manufactured state to an immense extent. In the year 1700, the population amounted only to 5000; in 1801 it had increased to 77,653, and in 1831 to 165,175. With regard to the other flourishing towns in Lancashire (the names and population of all of which will be found in the tables contained in this work), it may be sufficient to mention that seven of the most populous, namely, *Salford*, *Ashton-under-Line*, *Oldham*, *Bury*, *Bolton-le-Moors*, *Wigan*, *Blackburn*, and *Preston*, are, like Manchester, engaged chiefly in the cotton manufacture. The united populations of these towns and their dependencies exceed 280,000. Bolton deserves to be specially noticed, as the first place in which the machinery invented by Hargreave, Crompton, and Arkwright, was introduced into the cotton manufactories. *Rochdale*, situate on the borders of Yorkshire, has long been noted for its manufactures of baize and flannel. A portion of the parish of Rochdale extends into Yorkshire, and includes the township and village of *Saddleworth*, near which the Huddersfield canal passes through one of the most wild and bleak districts in the kingdom; yet in this place a large population, exceeding 15,000, derive a subsistence from the cloth manufacture. *Warrington*, a place of great antiquity, is enabled by its situation on the Mersey to carry on a considerable trade in cottons and sail-cloths; it possesses also extensive manufactures of hardware, pins, and glass. *Stonyhurst College*, the principal establishment connected with education which the Roman Catholics possess in Great Britain, is situate in the immediate vicinity of Blackburn.† *Fleetwood*, a seaport at the mouth of the Wyre, connected with Preston by a railway. In June 1841 it contained 1400 inhabitants.

§ 21. *Leicestershire.*

Leicester, the county town, and a place of considerable antiquity, is situate on the river Soar, 98 miles from London. The chief employment of its inhabitants is the manufacture of hosiery goods, cotton-gloves, and lace; in regard to the first of which, the extent of its manufacture is only second to that of Nottingham. It communicates with every part of the kingdom by means of canals. *Loughborough*, situate on the great road from London to Manchester, carries on the manufacture of cotton, worsted, and merino hosiery, and of bobbin-net lace. The ancient town of *Ashby-de-la-Zouch*, on the borders of Derbyshire, besides the manufacture of hosiery, is likewise engaged in the malt trade. *Melton Mowbray*, in the north-east of the county, is noted for its cattle-market, the largest of any in the kingdom. It also is famous in

* This magnificent undertaking has required, in capital and loans, nearly £1,500,000. Besides the excavations at *Mount Olive*, *Renyon*, and other places (the first of these cut for two miles through the solid rock), and an embankment four miles in length, extending across a soft bog called the *Chat-Moss*, the works include a tunnel at the Liverpool extremity of the railway 2240 yards in length, and a smaller tunnel measuring 290 yards; a viaduct, consisting of nine arches of fifty feet span each, thrown across the *Sankey Valley* and *Canal;* and on the whole line of the railway, sixty-three bridges, of which thirty pass under the turnpike-road, twenty-eight over it, four over brooks, &c., and one over the river Irwell.

† *Stonyhurst* was gifted, about the beginning of the present century, by its wealthy owner, Mr. (afterwards Cardinal) Weld, to the Jesuits driven out of Liege. Two hundred pupils are here brought up under the charge of ten professors. There are nine other colleges belonging to the British Roman Catholic body, — namely, *St. Edmunds*, Old Hall Green, near Ware, in Hertfordshire; *Oscott*, near Birmingham; *St. Peter's* and *St. Paul's*, Prior Park, near Bath; *Ampleforth*, near York; *St. Gregory's*, Downside, near Bath; *St. Mary's*, Blairs, in Kincardineshire, Scotland; and the *Benedictine College*, Douay, Department du Nord, France. There are also an English college at Rome, and Scotch colleges at Rome and Valladolid.

the annals of fox-hunting; and is the headquarters of the Leicester hunts, particularly the celebrated subscription hunt to which it gives its name. *Belvoir Castle*, the splendid mansion of the Duke of Rutland, is situated on the eastern border of the county. Leicestershire abounds in places connected with remarkable events in history; of these Bosworth Field, the scene of the battle fought in the neighbourhood of *Market-Bosworth*, a little to the east of the line of the Ashby-de-la-Zouch Canal, stands the most prominent. The monastery of Black Canons, in which Cardinal Wolsey died, was situate near the town of Leicester. Among the number of eminent men to which this county has given birth, we may mention Thomas Simpson, the self-taught mathematician, born at Market-Bosworth already noticed, and Robert Bakewell, whose improvements in agriculture and the breeding of farm-stock have given a merited celebrity to his native place, *Dishley Grange*, which is situate about two miles to the north-west of Loughborough.

§ 22. *Lincolnshire.*

Great part of this large maritime county was originally covered with fens and marshes. It is now fertile, abounds in flocks and cattle, the largest breeds of their sorts in England, but is uninviting in appearance, humid and unhealthy. It is divided into three districts, named *Holland*, *Kesteven*, and *Lindsey*. Holland is the low marshy track which extends along the Wash as far north as Wainfleet. Kesteven lies to the west of Holland, extending from the middle to the southern border of the county. It is an elevated, but level and fertile region. Lindsey comprehends all the rest of the county, to the north of the Wytham and the Fossdyke, and contains a large portion of high, bleak, and barren country, called the *Wolds*. The western and northern parts of Lindsey and Kesteven are traversed by the great oolitic watershed of England. *Lincoln*, an ancient city, the *Lindum Colonia* of the Romans, is situate at the bottom, and on the acclivity of a lofty hill, which rises from the banks of the river Witham, 133 miles north of London. The cathedral, on the top of the hill, a magnificent fabric, with a central tower 300 feet high, and two others at the west end, each 180 feet, forms a conspicuous object at a great distance. Its great bell is well known by the name of Tom of Lincoln. Lincoln is the capital of the county, a burgh, and a bishop's see; but has no manufactures, and its only trade is in corn and wool. It was, however, at one time a place of great trading note, and, as far back as the time of Edward III., was a staple for wool, leather, and lead. *Boston*, a seaport, near the mouth of the Witham, is a burgh, where a great trade is carried on, chiefly in corn. The chief object is the church, an ancient gothic structure, with a tower 281 feet high; at the summit of which is a lantern, that serves as a landmark for the dangerous navigation of the Boston and Lynn deeps. *Grantham*, on the Witham, and *Stamford*, on the Welland, carry on some trade in malt and corn. *Louth*, communicating by a canal with the mouth of the Humber, possesses an extensive manufacture of carpets and blankets; worsted-spinning, soap-boiling, paper-making, and ship-building, are also carried on in the town. The very ancient borough-town of *Great Grimsby*, situate at the mouth of the Humber, has some trade with the Baltic. *Gainsborough*, on the Trent, favoured by its facilities of water communication, carries on a flourishing inland commerce. Boston and Grimsby are the only out-ports of this county.

§ 23. *Middlesex.*

Middlesex contains a number of towns and villages, many of which serve as outworks to the great metropolis, that occupies the south-eastern corner of the county. Immediately to the west of the city of Westminster is *Chelsea*, remarkable for its Hospital for decayed and maimed soldiers, and for the Royal Military Asylum, which serves as a place of education for one thousand children of non-commissioned officers and soldiers. Higher up the river are *Fulham*, the site of the palace of the Bishop of London; the populous villages of *Hammersmith* and *Chiswick;* the market-town of *Brentford*, where the elections of members for the county were formerly held; *Isleworth*, in the neighbourhood of which is *Sion-House*, a noble mansion belonging to the Duke of Northumberland; *Twickenham*, near which is the villa of Strawberry Hill, the seat of the celebrated Horace Walpole; *Hampton*, adorned with a royal palace and extensive gardens; lastly *Staines*, on the confines of Surrey and Buckinghamshire. The principal towns and villages in the west and north of the county are *Uxbridge; Harrow-on-the-Hill*, the seat of a celebrated free grammar-school; *Stanmore; Edgeware; Chipping Barnet;* and *Enfield*. Nearer London, on its northern side, are *Edmondton; Tottenham; Hornsey; Finchley; Hendon; Highgate*, the pic-

turesque site of one of the metropolitan cemeteries; *Hampstead; Kilburn; Kentish Town; Stoke-Newington; Hackney; Homerton*, the seat of the principal college belonging to the Congregational Dissenters or Independents;* and *Islington*. The only other villages worthy of notice are *Turnham Green*, to the north of Chiswick; *Acton*, to the north of Hammersmith; *Ealing*, to the north of Brentford; *Hounslow*, to the west of Twickenham; *Hanwell* and *Hayes*, both on the Uxbridge road; and *Bromley* and *Stratford-le-Bow*, both situate on the Lea to the east of London.

§ 24. *Monmouthshire.*

Monmouth, an ancient town, the capital of the county, is situate between the Wye and its tributary the Munnow, at the confluence of the two streams, about 14 miles above the prosperous sea-port town of *Chepstow*, a place remarkable for the high tides which proceed from the estuary of the Severn. *Newport*, situate on the river Usk, near its entrance into the Bristol Channel, and possessing a magnificent dock for the accommodation of shipping, is a place of great trade in the coal and iron for the production of which this county is so celebrated. It receives, by means of the Usk navigation, and the Brecon and Monmouth canal, the mineral produce of the works in the neighbourhood of the towns of *Usk*, *Abergavenny*, and *Pont-y-Pool;* and the Ebbw, Sirhowey, and Rumney railways connect it with the ironworks at *Nant-y-glo* (or valley of coal), *Ebbw Vale*, *Tredegar*, *Rumney* or *Rhymney*, and other places in the remarkable series of parallel valleys stretching nearly from south to north, from the western portion of Monmouthshire into Brecknockshire. The very ancient Welsh and Roman town, *Caerleon*, stands on the Usk, about four miles above Newport. Newport and Chepstow are the only sea-ports in this maritime county.

§ 25. *Norfolk.*

Norwich, an episcopal city, the capital of the county, 108 miles N. E. by E. of London, is built partly upon a plain on the banks of the river Wensum, and partly on the acclivity of a hill, which rises from it. It has been the seat of manufacturing industry from a very early period; the fabric of woollens having been established there by a colony of Flemings towards the end of the sixteenth century.† The principal employment of the inhabitants is now the manufacture of shawls for home consumpt and exportation to foreign markets. There are also manufactures of bombazines, crapes, silk goods, cotton, and canvas. Malting is likewise a considerable trade, and the corn-market is one of the most extensive in the kingdom. Norwich possesses an ancient castle, and a cathedral, considered to be one of the finest remains of Saxon architecture in England. In Saxon times, a spacious estuary extended to Norwich, which is represented, even in the thirteenth and fourteenth centuries, as situate on "an arm of the sea." But this has been completely obstructed by the formation of Yarmouth downs, which stretch across its ancient entrance. *Yarmouth*, a seaport and burgh, at the mouth of the Yare, is a well-built town, with a convenient harbour, and enjoys a considerable foreign trade. The curing of herrings is a great object of industry during the season. The numerous sandbanks on the outside of Yarmouth roads are noted for shipwrecks. *Lynn-Regis*, or *King's Lynn*, a seaport, market-town, and borough, on the right bank of the Ouse, about eight miles from the sea, and 97 from London, has a harbour capable of receiving 300 sail. Its situation at the mouth of a long navigable river, is advantageous for exporting the products of the soil, and for furnishing the population of a large district with the foreign commodities they require. *Thetford*, a very ancient town, built on the banks of the Thet, a tributary of the Little Ouse, and situate partly in this county and partly in Suffolk, besides some manufactures of paper, iron, and malt, carries on a considerable trade in corn and wool. A little to the west of the seaport town of *Wells-next-the-Sea*, in the north of the county, two places of considerable interest may be pointed out, namely, *Holkham Park*, the seat of the venerable Earl of Leicester (formerly Mr. Coke), whose exertions in improving the practice of farming have added so much to the wealth and celebrity of his native county; and *Burnham Thorpe*, the birthplace of Admiral Viscount Nelson. The out-ports of Norfolk are Yarmouth, Lynn, *Clay* (jointly with *Blackney)*, and Wells.

* The other theological institutions belonging to this body of dissenters are—*Coward* and *Highbury Colleges*, London; *Western Academy*, Exeter; *Rotherham College*, near Sheffield; *Airdale College*, near Bradford, Yorkshire; *Lancashire Independent College*, or *Blackburn Academy*, Lancashire; *Spring Hill College*, near Birmingham; and the *Independent College*, Brecon, South Wales. The similar institutions belonging to the Baptists are—*Bristol Academy; Stepney College*, London; *Northern Baptist Academy*, Horton near Bradford, Yorkshire; *General Baptist Academy*, Loughborough, Leicestershire; and *South Wales Academy*, Pont-y-Pool.

† The manufacture of woollen twists and stuffs introduced by the Flemings was first carried on at *Worstead* or *Worsted*, a hamlet situate about 12 miles to the north-east of Norwich.

§ 26. *Northamptonshire.*

Northampton, the county town, stands on a gentle elevation, on the northern bank of the Nen, 66 miles north of London. The town is clean, and in a thriving condition, and most of the houses are neatly built of a reddish-coloured stone. The inhabitants are chiefly engaged in the manufacture of leather, shoes, stockings, and thread-lace. *Naseby*, 12½ miles S.S.E. of Northampton, is memorable for the defeat of the royalists by the parliamentary forces in 1645. *Peterborough*, one of the smallest English cities, is situate in a corner of the county, on the confines of Huntingdonshire, 79 miles from London. The cathedral is an ancient structure, formerly an abbey church, and exhibits some specimens of the early Gothic and Norman architecture. About eight miles to the south-west of Peterborough are some slight remains of the ancient castle of *Fotheringay*, the birthplace of Richard the Third, and where the sufferings of Mary Queen of Scots terminated in her execution. The remaining towns of the county are of no great size or importance. The industrious inhabitants of *Wellingborough* are engaged in the making of boots and shoes; and those of *Kettering* in wool-dressing and spinning. *Daventry*, situate to the west of the county town, is considered the central place of the kingdom for horse-dealing.

§ 27. *Northumberland.*

Alnwick, recently the county town, is a small place, on the river Aln, and is noted chiefly for its castle, the ancient and magnificent residence of the Earls and Dukes of Northumberland. Its harbour of *Alnmouth* is a creek of the port of Berwick; and in the upper part of the valley of the Aln is *Chillingham Park*, the seat of the Earl of Tankerville, noted for a breed of white beeves, supposed to be the remains of the ancient native stock of the country. In this same northern division of the county are the two small country towns of *Wooler* and *Belford*, principally noted as stages on the great north roads. *Newcastle-upon-Tyne* is a large town on the north bank of the river, 12 miles from the sea, and 301 N.N.W. of London. It maintains an extensive trade, the principal part of which is the shipping of coals. Newcastle being also a kind of metropolis to the north of England, has a very extensive commerce in every other branch of trade; and various important manufactures are carried on, such as those of glass bottles, crown and plate-glass, lead, iron, and various chemical preparations. The *new castle*, from which it derives its name, built by William the Conqueror, upon the banks of the Tyne, to overawe the Northumbrians, is now the oldest building in the town, but is still in tolerable preservation. The revenue of the corporation amounts to about £40,000 a-year. The inhabitants are distinguished for their attachment to literary and scientific pursuits; and their Literary and Philosophical Society has acquired considerable reputation. The assizes for Northumberland are held here, and there is a large building, adorned with pseudo-doric porticoes, for the accommodation of the courts, overlooking the bridge. A number of elegant streets and public edifices have recently been erected. In 1821 only 600 vessels cleared from the Tyne for foreign ports, but in 1838 the number amounted to 2900. From *Newburn*, five miles above Newcastle, to *North Shields*, and *Tynemouth*, at the mouth of the river, a distance of 19 miles, the bank presents a continued series of manufacturing and commercial establishments. The great staple article of export is coal, of which nearly three millions of tons are exported annually. Grindstones are also a staple article of export, upwards of 5000 being annually shipped. The district round Newcastle may be considered the native country of railways, which have been in use here for nearly 200 years, in conveying coals from the collieries to the Tyne. The village of *Wallsend*, situate between Newcastle and North Shields, is noted for the excellent coal found in its neighbourhood, but it is here mentioned from its connection, as the name indicates, with the celebrated Roman wall built by the Emperor Severus, on the site of an older barrier constructed by Hadrian. This great military work, eighty miles in length, commenced at Bowness, on the Solway Firth, in Cumberland, and extended, by way of Carlisle, Thirwall Castle, Brunton near St. Oswalds, Rowchester, and Heddon-upon-the-Wall, to Newcastle, thence proceeding eastward by the Red Barns and Ouseburn, terminated at Wallsend. The other towns in Northumberland are of secondary importance. *Hexham*, situate on the Tyne above Newcastle, was once an episcopal city, and is still distinguished by its magnificent cathedral. *Morpeth*, about fourteen miles to the north of Newcastle, may be mentioned on account of its great cattle fairs. On a lofty rock, at the north-eastern corner of the county, opposite Holy Island, is *Bamborough Castle*, an ancient building, originally constructed by Ida, the first Saxon conqueror

of Northumberland. This castle, with other property, has been left in trust by the late Lord Crewe, for certain charitable purposes, and particularly for the relief of seamen shipwrecked upon the adjoining coast; and on the south bank of the Tweed above Coldstream, is the site of *Wark Castle*, so often mentioned in the history of the border wars. Northumberland has been the scene of many well-known battles, particularly those of *Flodden-Field*, near the river Till, not far to the south of Coldstream, and *Chevy Chace*, or the *Battle of Otterburn*. Newcastle is the only outport in this county. (See § 47.)

§ 28. *Nottingham.*

Nottingham is a large town, finely situate on the side of a hill which overlooks the valley of the Trent, and surrounded by a well-cultivated, rich, and picturesque district. The distance from London is 124 miles N.N.W. Nottingham has been long celebrated for its manufacturing industry, of which the oldest and most extensive branch is the manufacture of stockings; but its prosperity has been advanced in a prodigious degree by the manufacture of bobbin-net, an article which has in a great measure supplanted the pillow-lace, for which Flanders, France, and some counties of England, were once highly celebrated. Besides these staple articles of trade, there are in the town and neighbourhood several large establishments for spinning and weaving cotton. Nottingham is also celebrated for its ale. *Newark-upon-Trent*, situate on the great northern road, is one of the most considerable corn markets in this part of England; it also exports to London great quantities of plaster of Paris, manufactured from the gypsum that abounds in the neighbourhood. The ancient town of *Mansfield*, situate on the western side of Sherwood Forest, carries on a trade in corn and malt, and its inhabitants are also engaged in cotton-spinning and in the manufacturing of hosiery and lace. In the northern portion of the county are *Clumber* and *Worksop*, the two noble mansions of the Duke of Newcastle. To the lord of the manor of Worksop belongs the honour of bearing the sceptre at the coronation of the kings and queens of England. Till 1838, Worksop was one of the principal mansions of the Duke of Norfolk, who then sold it to his Grace of Newcastle. The small parish church of *Hucknall*, about six miles N.N.W. of Nottingham, contains the mortal remains of the poet Byron. *Newstead Abbey*, his residence while living, is in its immediate vicinity.

§ 29. *Oxfordshire.*

Oxford is situate at the confluence of the Cherwell and Isis, 56 or 58 miles west by north of London. The air is pure and salubrious, and from the neighbouring heights, the city with its spires and domes and towers, presents an imposing spectacle. The city is of an oval form, and about two miles in circumference. Four principal streets, broad and well built, meet at the centre; but the communications between them are rather narrow. The High Street is generally admired for length, and for the number and the magnificence of the buildings on both sides of it. The university contains nineteen colleges, and five halls;* and the system of teaching and of internal administration is very nearly the same as that of the university of Cambridge already described. (See *antè*, p. 233.) The resident members of the Uni-

* The following are the different Colleges and Halls in Oxford:—First, *Baliol College*, founded in 1269, by John Baliol of Bernard Castle, father of John Baliol, king of Scotland. 2*d*, *Merton College*, erected in 1267 by Walter de Merton, Bishop of Rochester and Lord Chancellor of England. 3*d*, *University College*, supposed to have been founded by Alfred, but principally restored by William, Archdeacon of Durham, and Walter Shirlaw, Bishop of Durham, and Henry Percy, Earl of Northumberland. 4*th*, *Exeter College*, founded in 1314, by Walter Stapledon, Bishop of Exeter. 5*th*, *Oriel College*, founded in 1324, by Adam de Brome, Almoner to Edward the Second. A tenement called *L'Orielle* or *L'Oriele*, was annexed to it by Edward the Third, from which the College derives its name. 6*th*, *Queen's College*, founded in 1340, by Robert D'Eglesfield, chaplain to Queen Philippa, consort of Edward the Third. 7*th*, *New College*, or *Winchester College*, founded in 1379, by the celebrated William of Wykeham, bishop of Winchester, and Lord High Chancellor of England. 8*th*, *Trinity College*, founded by Sir Thomas Pope in 1594. 9*th*, *Lincoln College*, founded in 1427, by Richard Fleming, bishop of Lincoln. 10*th*, *Worcester College*, founded by Sir Thomas Coke of Bentley in Worcestershire in 1714. 11*th*, *St. John's College*, founded in 1557, by Sir Thomas White, Alderman of London. 12*th*, *All Saints' College*, founded in 1438, by Henry Chichele, archbishop of Canterbury. 13*th*, *Magdalen College*, founded in 1458 by William of Wainfleet, bishop of Winchester. 14*th*, *Brazen Nose College*, founded in 1502 by William Smith, bishop of Lincoln, and Sir Richard Sutton of Prestbury in Cheshire. Its singular name appears to have been derived from an iron ring fixed in a nose of brass, and serving as a knocker to the gate. 15*th*, *Corpus Christi College*, founded in 1516 by Bishop Fox, Lord Privy Seal to Henry the Seventh and Henry the Eighth. 16*th*, *Christ Church*, founded by Cardinal Wolsey in 1525. 17*th*, *Jesus College*, founded in 1571 by Queen Elizabeth. 18*th*, *Wadham College*, founded in 1613 by Nicolas Wadham of Merrifield in Somersetshire. It was in this College that the plan of the Royal Society was first proposed. 19*th*, *Pembroke College*, founded in 1620, by Thomas Tesdale of Glympton in Oxfordshire, and Richard Wightwick, rector of Ilsley in Berkshire. The Halls are attached as follows:—*Alban Hall*, to Merton College; *Edmund Hall*, to Queen's College; *St. Mary Hall*, to Oriel College: *New Inn Hall*, to New College; and *St. Mary Magdalen Hall* has acquired Hertford College, which had lapsed to the Crown.

versity have been estimated at upwards of three thousand; of these about a thousand, including five hundred and fifty-seven holders of fellowships, are maintained on the revenues of the different colleges. The University returns two members to Parliament, and the elective franchise is vested in the doctors and masters of arts, who are in number about twelve hundred. Among the public buildings and institutions connected with this University, are the two great Libraries which bear the names of their respective founders, Sir Thomas Bodley, and Dr. John Radcliffe; the public schools where the professors deliver their lectures; the Sheldonian Theatre, built by the celebrated Wren, after the model of the theatre of Marcellus at Rome, and in which all the great public meetings of the members of the University are held; the Museum, founded by the well known antiquary Elias Ashmole; the Picture Gallery, and that of the Arundel Marbles; the Clarendon Printing-House, designed by Sir John Vanburgh, and erected from the profits of the sale of Lord Clarendon's History of the Rebellion; lastly, the Observatory, and the Botanic Garden. Manufactures are carried on in this county to a very limited extent: shag, a sort of coarse velvet, is made at *Banbury*, a place of great trade, situate on the line of the Oxford Canal; blankets at *Witney;* and gloves, and other articles in leather at *Bampton*, both in the south-west of the county; and gloves and polished steel at *Woodstock;* in the immediate vicinity of which town is *Blenheim*, the princely mansion erected for the Duke of Marlborough, as a testimony of national gratitude, and, with the manor of Woodstock, settled upon him and his heirs.

§ 30. *Rutlandshire.*

This small inland county, the least of any in England, probably derives its name from the ochreous appearance of some portions of the soil. It is fertile, well watered, and abounds in woods, pastures, and extensive orchards. Nearly half the land in the county is under tillage, and produces wheat of a remarkably fine quality. Cheese of the Stilton sort is made in the fruitful valley of *Catmose*, the central district of the county. Limestone is worked in several places; and there are extensive quarries of building-stone at *Ketton*, near the borders of Northamptonshire. A canal, extending from Oakham to Melton-Mowbray, and from thence communicating by the river Wreak with the Leicester navigation, has facilitated the transmission of agricultural produce, to which the trade of Rutlandshire is chiefly confined. There are some branches of the silk-manufacture carried on at *Oakham*, the capital of the county; also a trade in coals: but the most remarkable feature of the town is its division into two parishes or manors — the one belonging to the Earl of Winchelsea, who holds a manorial court here every year; the other to the Dean of Westminster, who holds a court every third year; thus presenting in miniature an exact image of the ancient feudal jurisdictions. Besides the county town, *Uppingham* is the only other market-town in Rutlandshire.

§ 31. *Shropshire, or the County of Salop.*

Shrewsbury, the county town, is beautifully situate on a circular peninsula, formed by the winding of the Severn, 153 miles from London. The town has a fine appearance when seen from a distance; but the streets are in general irregular, narrow, and ill paved, and the houses of an inferior description. It contains, however, several public buildings, some of which are very striking. The most conspicuous are six churches, and several meeting houses, a town-hall, a county jail and bridewell, a large and magnificent market-house, and a handsome theatre. Shrewsbury is a place of great antiquity, and still contains many relics of its former grandeur, especially the ruins of an old castle, and a venerable abbey. The trade of the place consists chiefly in fine flannels, which are manufactured at Welshpool, and after being finished at Shrewsbury, are sent from thence all over the country, and exported to foreign markets. In the neighbourhood of the town there are several spinning and fulling mills, linen-manufactories, and iron-works; the latter on a large scale. The great iron and coal-field, in which the extensive forges of *Colebrooke-dale* and *Ketley*, near Broseley, are situate, lies to the east and south-east of the town, within a distance of from 13 to 15 miles. The thriving little town of *Wellington*, within the same tract, carries on an extensive manufacture of nails. There are considerable potteries at *Broseley* and *Coalport*, in Colebrooke-dale; the former is noted for coarse earthenware, and the latter is the most celebrated in the kingdom for porcelain and queen's ware. *Bridgenorth* is noted for its fairs; and it possesses also a considerable trade connected with the inland carriage of the Severn. *Hales Owen*, locally situate in Worcestershire, carries on a thriving trade in nails. *Ellesmere* and *Oswestry* owe

their importance to the canal which bears the name of the former town, and which forms the connecting link between the canals of Montgomery and Chester.

§ 32. *Somersetshire.*

Bath, one of the most beautiful cities in England, or indeed in Europe, stands on the river Frome, 105 miles west of London. A great part of the city is little elevated above the level of the stream; but the northern portion gradually rises in a succession of streets and crescents, one above the other, to the height of near 300 feet. The whole is built of a light-coloured oolite, which is quarried on the spot, and, when polished, gives to the houses an appearance of richness and elegance. The warm springs are of great celebrity, and are much frequented by visitors in quest of health or pleasure. They are few in number, and differ but little in their medicinal properties. The temperature of the coolest is 97°, and of the warmest 117° Fahr. The city is well supplied with every requisite for the amusement and relaxation of the visitors who frequent it. There is an excellent theatre, two sets of public rooms for balls and concerts, a great number of public libraries, and beautiful walks. Besides the cathedral and several parish churches and chapels, there are places of worship for every denomination of Christians. The markets are well supplied, and at a moderate rate. The houses for boarding or lodging are clean, and admirably conducted; and in no place can an equal amount of comfort be obtained at the same expense. The abbey church or cathedral is a fine specimen of gothic architecture, and has been lately very much improved by repairs and additions. The diocese, combined with that of Wells, extends over the county of Somerset. The Frome is navigable to Bristol; and the canal, which unites the Thames and the Severn, passes from Bath to Newbury on the Rennet. *Wells*, which shares with Bath the honour of giving name to the bishopric, is a comparatively insignificant place, situate near the southern base of the Mendip hills, 19 miles south-west of Bath, and is remarkable chiefly for its cathedral — a venerable structure, supposed to have been built early in the 13th century. *Bedminster*, a populous suburb of the city of Bristol (*see* Gloucestershire) is locally situate in this county. *Taunton*, the county town, on the small river Tone, extends about a mile from east to west, and consists of four principal streets, with several smaller ones intersecting them. The inhabitants are employed in the manufacture of silks and woollen goods; and there are extensive breweries of malt liquor for exportation from Bristol. *Wellington*, on the borders of Devonshire, is a handsome town, consisting of four streets. Manufactures of druggets, serges, and earthenware, form the principal employment of its inhabitants. The Duke of Wellington derives his English titles of nobility from this place. *Yeovil* is a large market town, with more than twenty streets and lanes. *Bridgewater*, situate on both sides of the Parret, about 14 miles from its mouth, carries on a considerable coasting and foreign trade. *Frome*, or *Frome-Selwood*, in the east of the county, is a thriving manufacturing place, engaged chiefly in the production of broad cloths, stockings; and some kinds of woollens are made at *Shepton-Mallet*, a little to the south-east of Wells. Bridgewater, and *Minehead*, at the western extremity of Bridgewater Bay, are the only outports in this county. The trade of the latter town is inconsiderable; but it is in repute as a sea-bathing place.

§ 33. *Southamptonshire, Hampshire, or Hants.*

Southampton is built upon an eminence between the rivers Itchin and Test, at the head of the inlet called Southampton Water, 75 miles south-west of London. It was formerly a place of great commercial and maritime importance, and still possesses a considerable trade, for the improvement of which great efforts have recently been made by its merchants. It is now connected with London by a railway, and has become, in consequence, an important steam-packet station. The favourable situation of the town for sea-bathing, and the celebrity of a chalybeate spring in the vicinity, have brought it into notice as a watering-place, and have of late years given rise to many improvements. *Winchester* is a very ancient episcopal city, built on the declivity of a hill near the river Itchin, and is chiefly remarkable for its cathedral, a splendid gothic edifice, originally built in the eleventh century, and rebuilt in 1394; and for a college and school founded in 1387 by William of Wykeham, one of its bishops. *Portsmouth*, the headquarters of the British royal navy, is an ancient sea-port on Portsea island, 72 miles south-west of London. The town is large, and a new town called *Portsea* has risen up beside it. Both towns and the dock-yard are so strongly fortified as to be considered nearly impregnable. The harbour, unequalled in Britain, and surpassed by very few in any part of the

world, is narrow at the entrance, but, within, its width increases, so as to render it capable of containing the greater part, if not the whole, of the navy of Britain. It has a bar outside with thirteen feet water even in the lowest spring tides, but inside there is water sufficient to float the largest ships of war at all times. The anchorage ground is excellent, and is free from sunken rocks, or other impediments. The east side of the harbour is formed by Portsea island; the west and north sides by the mainland of Hampshire. On the west side of the entrance is the town of *Gosport*, in the vicinity of which is the large naval hospital of *Haslar*, for sick and wounded seamen. Portsmouth harbour has the additional advantage of opening into the celebrated road of Spithead, which lies between Hampshire and the Isle of Wight. (See *antè*, p. 179.) In the south-western part of the county the *New Forest* occupies about 92,000 acres, but was formerly much more extensive; only about two-thirds of it are now the property of the Crown. Oak and beech are the prevailing kinds of timber, but there are also within the limits of the forest large tracts of heath. Southampton and Portsmouth are the out-ports in this county.

§ 34. *Staffordshire.*

Stafford, the county town, is situate on the small river Sow, three miles from its confluence with the Trent, and 140 north of London. The houses are in general well built of brick; and the public buildings are numerous. It has a considerable trade in boots and shoes, and several extensive tanneries. *Tamworth* is a small but well-built town, which still carries on a respectable trade in woollen cloth, printed calicoes, and leather. *Lichfield*, a very ancient episcopal city, in which rank it is jointly associated with Coventry, stands on a branch of the Trent, 119 miles from London, by Coventry, and 124 by Northampton. The cathedral is a fine building, of high antiquity, with a spire 256 feet high, and two towers, seen at a great distance. The interior is adorned with some fine marble monuments, particularly those of Dr. Samuel Johnson and David Garrick, who were both natives of Lichfield; which was also the birth-place of Elias Asmole and Bishop Newton. *Leek*, in the north-east of the county, is extensively engaged in the silk manufacture; and there are large cotton-mills at Rocester and Tutbury on the Dove. *Burton*, at the head of the navigation of the Trent, is celebrated for its excellent ale, and has some manufacture of hats, cotton goods, and iron, with several tanneries. The most important towns in this county, however, are those engaged in the pottery and iron manufactures. In reference to the former branch of industry it may be remarked, that, with the exception of coal and fire-clay, Staffordshire furnishes few materials for the manufacture of English earthenware, for which it is so famous. Potters' earth is indeed found in different places, but the finer clays are all brought from Dorsetshire and Devonshire, and principally from the Isle of Purbeck in the former; the flints from the Kentish chalk-pits, and from Wales and Ireland; and the decomposed feld-spar used in the making of porcelain, from Cornwall. The district called the "*Potteries*," in which the great national manufacture now alluded to is carried on, is situate in the north-west portion of the county. It comprehends *Stoke-upon-Trent*, *Burslem*, the original seat of the manufacture, *Hanley*, *Longport*, *Lane-End*, *Delft*, *Shelton*, and other places, the whole of which, though formerly distinct from one another, now exhibit the connected appearance of a large town. *Newcastle-under-Lyne*, in addition to its important manufactures of cloth and hats, and its trade in coals, has become the mart of many articles that are consumed in the Potteries. It gives the title of Duke to the head of the noble family of Clinton. The extensive manufactory called *Etruria*, that was established by the celebrated Wedgwood, is situate about a mile and a half to the north-east of Newcastle. Of the different towns engaged in iron-making, and the manufacture of hardware, we can name only at present two or three of the most considerable. The names of several others will be found in a general statement given in a former portion of this work. (See *antè*, p. 204.) *Wolverhampton*, a place of great antiquity, is a large, populous, and well-built town, in the midst of canals, coal-mines, and iron works. It maintains a very extensive trade in locks, keys, bolts, and other heavy articles of iron work. *Walsall*, a neighbouring town, excels in the production of saddlers' ironmongery. *Wednesbury* is another seat of the hardware trade; and besides guns, furnishes also materials and tools for the saddler, coach-maker, carpenter, and joiner.

§ 36. *Suffolk.*

Ipswich, the county town, 69 miles from London, stands on the side of a gentle eminence, rising above the river Orwell, which is here navigable for small vessels.

It is a place of great antiquity. The streets are well paved, and it has a good market place. Ipswich had formerly 19 churches, and still retains 12, besides places of worship for dissenters. There are likewise a town-hall, a shire-hall, and a large county jail. Ipswich was formerly noted for its broad-cloths, and also for its sail-cloths, said to be the best in England; but the woollen trade of the place began to decline during the latter part of the seventeenth century, and was gradually transferred to a different part of the kingdom. The industry of the inhabitants of this place is now confined to a traffic in corn and malt, to ship-building, and to a foreign commerce of no great extent. *Bury-St.-Edmunds*, situate on the Lark, and *Sudbury* on the Stour, have also lost much of their former importance in the wool-trade. The latter town was one of those into which the woollen manufacture was introduced by the Flemings. It still exports serges; but many of its inhabitants now find employment in an extensive silk-manufactory which has been erected in the town. *Eye*, situate near the Waveney, in the north of the county, contains an industrious population, engaged chiefly in manufacturing bone-lace. *Bungay* and *Beccles*, two well-built towns, carry on each a considerable traffic dependent on the navigation of the Waveney. Besides the port of Ipswich, there are three other outports in this county; namely *Woodbridge*, *Aldborough*, and *Southwold*; but, with the exception of the first, the trade carried on at these places is very inconsiderable. *Lowestoft* or *Lostoff*, situate on the coast, deserves to be noticed, not only for its admirably constructed artificial harbour, which, through the medium of *Lake Lothing*, connects it with the navigation of the river Waveney, but for the skill and industry of its inhabitants in carrying on the business of the fisheries.

Before closing this brief sketch of the topography of Suffolk, it may be proper to advert to the falling off in the condition of many of the towns in this part of England during the last two or three centuries. We have seen that their principal manufacture has been removed almost entirely to more favoured districts, and it is natural to conclude, that the change has considerably reduced the number of their inhabitants. It may not be an easy matter to ascertain the exact amount of the diminution; but the fact is certain, that several of the towns in question must have been at one time much more populous than at present. In an insurrection during the year 1525, more than 4000 weavers and other tradesmen are said to have assembled out of Sudbury, Lavenham, and the neighbouring towns. Ipswich, as we have already stated, contains only 12 out of the 21 parish churches which it once possessed; and Bury, which is now divided into two parishes, had before the period of the Reformation, in addition to its magnificent abbey, founded in the year 633 by Sigibert, King of the East-Angles, not fewer than 41 churches and chapels, most of them richly endowed.

§ 37. *Surrey.*

Southwark and *Lambeth*, two of the metropolitan boroughs, occupy the bank of the Thames opposite London, Westminster, and the Tower Hamlets. They contain but few public buildings of any importance. The principal of these are, Lambeth Palace, the ancient residence of the Archbishops of Canterbury, situate near the east end of Westminster Bridge; the new Bethlehem Hospital for lunatics, a very large structure; the King's Bench Prison; St. Thomas's and Guy's Hospitals; and the ancient church of St. Saviour, Southwark, at London Bridge. Southwark was so named from its being the southern outwork of the fortifications of ancient London. *Guildford*, a market-town on the Wey, 30 miles from London, is, alternately with Croydon, the place where the assizes are held. *Croydon*, 10 miles from London, is a well-built town, pleasantly situate at the foot of the Banstead hills, and is noted for its weekly grain-market. Next to the metropolitan districts, it is the most populous place in the county. Near it, at *Addiscombe*, is one of the colleges belonging to the East-India Company.

Dulwich, with its celebrated college and picture gallery; the former founded and richly endowed by Edward Alleyn, who was contemporary with Shakspeare, and a performer in many of his tragedies, is situated nearly half-way between Croydon and London. Near Dulwich is *Norwood*, the site of the south metropolitan cemetery. The other towns in Surrey are not distinguished for populousness; and, generally speaking, the most ancient, such as *Haslemere*, *Bletchingley*, and the much talked of *Gatton* (all of which, up to the year 1832, returned members to parliament), are now partially, or totally decayed. *Godalming*, a place of some note for its hosiery and woollens, is, like Guildford, situate on the Wye, which is navigable as far as the former town. *Farnham*, near the borders of Hants, is chiefly remarkable for its trade in hops, which are esteemed the finest in England. It is also the seat of the senior department of the Royal Military College. *Reigate*, in the centre of the county

retains in part its ancient parliamentary privileges, but in other respects it is a place of little importance. *Dorking*, situate a little to the west of the last-mentioned town, possesses a singular and valuable breed of domestic fowls. *Epsom*, situate about 14 miles south-west from London, derives its chief importance from its celebrated race-course, and its mineral spring, formerly in great repute. Turning again our attention to the banks of the Thames, and ascending that portion of the course of the river which lies to the west of the metropolis, we pass in succession the populous villages of *Battersea*, *Wandsworth*, *Putney*, *Barnes*, and *Mortlake*. Beyond these are *Kew* (celebrated for its royal palace and botanical garden), and the picturesque little town of *Richmond;* in the ancient churchyard of the latter of which are deposited the remains of Thomson the poet, Burbage, the earliest performer of Richard the Third, in Shakspeare's well-known historical play, and Kean the tragedian. The ancient towns of *Kingston-upon-Thames* and *Chertsey* (the latter the retreat of the poet Cowley) are situate higher up the Thames. A new town, already containing 200 houses and villas, is forming between Kingston and the Southampton Railway. Besides these places, Surrey, like Middlesex, contains a number of small towns, some of which form as it were the suburbs of the metropolis; such as *Clapham*, *Ham*, *Long Ditton*, *Thames Ditton*, *East and West Moulsey*, *Walton*, *Weybridge*, *Thorpe*, *Egham*, along the south side of the Thames; *Cobham*, *Working*, *Ripley*, *Effingham*, *Bookham*, *Cobham*, *Esher*, *Leatherhead*, *Ashstead*, *Ewell*, *Cheam*, *Sutton*, *Beddington*, *Mitcham*, *Tooting*, *Camberwell*, *Peckham*, *Streatham*, *Merstham*. Five miles south-east of Windsor, one mile from Egham, is *Runnymede* or *Runney-Mead*, where Magna Charta was signed by King John in 1215.

§ 38. *Sussex.*

Brighthelmstone, now contracted to *Brighton*, so lately as 1784 only a small fishing village, has increased with unprecedented rapidity to a large, handsome, and populous town. It is built on the sea-coast, 51 miles south of London, under the shelter of the South Downs, which protect it from the northern and eastern blasts. Magnificent squares and parades have started into existence, and have speedily found occupants; churches and chapels have been erected; hotels, club-houses, and other similar establishments are numerous; and every necessary, convenience, and luxury, may be found in the markets, shops, and repositories. A stupendous chain-pier has been erected for the convenience of the numerous passengers who take this route to and from France; and a royal palace, called the Pavilion, erected by King George IV. in the oriental style, is the occasional residence of the Court. Brighton is not a place of trade or manufacture, but owes its prosperity to a change of fashion, which has made it the favourite leisure resort of the wealthy of the upper classes. *Lewes*, one of the county towns, stands at the foot of the chalk-hills, 49 miles from London. It occupies a pleasant situation, is well built, has some trade, and contains six churches. *Chichester*, another of the county towns, and a bishop's see, occupies a fine situation at the foot of the South Downs. The cathedral is not remarkable as a building, but has a beautiful spire, 300 feet high. It stands upon the small river Levant, about a mile from the sea, and 62 miles south-west of London. *Hastings*, in the south-east corner of the county, 64 miles from London, is the principal of the Cinque Ports, (see *antè*, p. 239), and had formerly a harbour, which is now reduced to a roadstead adapted for small vessels and fishing-boats. It is said to have been originally built by a Danish pirate, whose name it bears; and is celebrated for the battle in which Harold, the last Saxon king of England, was defeated and killed by the army of William the Conqueror in 1066. The site of the victory is commemorated by *Battle Abbey*, erected by William, eight miles north-west of Hastings. *Arundel*, on the Arun, east of Chichester, is chiefly remarkable for its magnificent castle, lately rebuilt by the Duke of Norfolk, who has made it his principal residence. To the castle is attached the singular privilege of giving the rank and title of Earl to its possessor. *Horsham*, a populous borough near the middle of the northern border of the county, contains the county jail. *Shoreham*, situate on the east side of the mouth of the Adur, *Newhaven* or *Meetching*, at the mouth of the Ouse, and *Rye*, near the south-eastern extremity of the county, are the principal trading places and out-ports in Surrey. The other out-ports are Arundel and Chichester, already mentioned. Hastings and *Eastbourne*, the latter situate a little to the east of Beachy-head, are sub-ports, or custom-house dependencies of the port of Rye.

§ 39. *Warwickshire.*

Warwick, the county town, stands on a rocky eminence on the banks of the river Avon, 90 miles north-west of London. It is a small town, consisting of only one

principal street, and is chiefly remarkable for the fine castle of the Earls of Warwick. About two miles and a half to the east of the town, are the baths and mineral springs of *Leamington* or *Leamington Spa*, now become a fashionable watering-place; and about twice that distance to the north, the remains of the ancient baronial castle of *Kenilworth*, the chief ornament of the little market-town of that name. *Coventry*, an ancient city associated with Lichfield in Staffordshire as the see of a bishop, is situated nearly in the centre of the kingdom, 92 miles from London. Notwithstanding its streets are in general narrow and irregular, and its appearance gloomy, it contains several handsome churches, especially St. Michael's, the spire of which is an object of general admiration. The manufacture of ribbons is here prosecuted to a great extent. *Birmingham* is situate in a narrow projecting angle of the north-western portion of the county, 102 miles in a straight line north-west of London, but 109 miles by the nearest road. The general appearance of the town is by no means prepossessing. Its great extent, and the multitude of houses and streets inhabited only by mechanics, give it a somewhat mean and poor appearance. It has lately, however, undergone great improvement, and some of the newest streets are wide, and the buildings handsome. Near the outskirts there are several spots of considerable beauty; and there is beautiful scenery about *Edgebaston*, which was lately a sequestered rural village, but has now become a fashionable appendage to Birmingham, and also along the course of the river Rea towards Moseley. The only building worthy of particular notice is the Town-hall, erected in 1834, of Anglesea marble, in the form of a Roman Corinthian peripteral temple, raised upon a rustic arcade. It contains one room 166 feet by 104, and 83 feet high, chiefly intended for concerts and public meetings. Birmingham has been, from a very remote period, a market-town, and a seat of manufacturing industry. Its staple productions are iron and steel goods of every description, both useful and ornamental. Plated wares, brass work, jewellery, japanned goods, cut-glass ornaments, guns, metal pens, buckles and buttons, wire, cut-nails, screws, and pins, umbrellas, horse and carriage furniture, and numerous other articles, are also produced in great abundance, and of every variety. Near the town is *Soho*, the celebrated manufactory of Bolton and Watt. The population in 1700 was about 15,000; in 1781. 50,000; and in 1831 the town contained 340 streets, 24,339 houses, and 110,914 inhabitants, of whom 301 families were employed in agriculture, and 20,763 in trade, manufactures, and handicrafts. Including the suburbs of *Bordesley*, *Duddlestone*, *Nechells*, and *Deritend*, the total population amounted in 1831 to 138,252. On the borders of Oxfordshire is *Edgehill*, memorable as the scene of the first pitched battle between King Charles I. and the Parliament in 1642. *Stratford-on-Avon* is a large and well-built market-town, with a bridge of fourteen arches across the river. It consists of twelve principal streets, and contains some handsome buildings. It is chiefly celebrated as the birthplace of Shakspeare, whose house and tomb are still to be seen. *Atherstone* and *Nuneaton*, near the borders of Leicestershire, are both thriving towns; the latter is engaged chiefly in the ribbon manufacture; the former is noted for its September fair, at which a greater quantity of cheese is sold than at any other in England. Warwickshire is rich in minerals. The best coal is worked at *Bedworth* on the line of the Coventry Canal. Free-stone well adapted for building is found in many parts; and a blue flagstone, much used in paving streets, is extensively quarried at *Wilnecot*, a little to the south of Tamworth, and at *Bidford*, to the south-west of Stratford-upon-Avon.

§ 40. *Westmoreland.*

Appleby, the capital of the county, a place of no great consequence, occupies the site of the Roman station *Aballaba*. *Kendal*, or more correctly *Kirkby-in-Kendal*, situate at the northern extremity of the Lancaster canal, is the only populous and commercial town in the county. Its manufactures consist of cottons, woollens, and hardware. It was one of the places to which Flemish weavers were invited in the fourteenth century, and the cloths made by them were long known by the name of the town. Westmoreland is essentially a rural county. The soil is little adapted for raising grain, and the attention of the farmer is principally directed to fattening of cattle, and rearing of sheep and geese, large flocks of the latter of which wander over the moors. Butter of an excellent quality is sent to the London market; and as great attention is paid to the breeding of pigs, the hams of Westmoreland are not the least valuable of its exports. The lofty mountains and picturesque lakes with which the greater part of the surface of this county is covered, have been noticed in other portions of this work. (See *antè*, pp. 159, 163, and 182.)

§ 41. *Wiltonshire, Wiltshire,* or the *County of Wilts.*

Salisbury, the county town, and an episcopal city, stands in a beautiful valley between the rivers Avon and Bourne, 82 miles S.W. by W. of London. The cathedral is one of the finest, purest, and noblest existing specimens of the early gothic architecture; and the spire, the tallest in Britain, rises to the height of 410 feet. Near *Amesbury,* a small town, 7½ miles north of Salisbury, is the celebrated monument called *Stone-henge (i. e.* Hanging Stones.) It is composed of concentric circles of large stones, from 18 to 20 feet in height, 6 to 7 in breadth, and about 3 feet thick, with large stones laid over top like lintels. Round it are numerous barrows and tumuli, in which skeletons and military weapons have been found. *Wilton,* from which the county derives its original name of Wiltonshire, is a small town to the west of Salisbury, and is celebrated for the manufacture of carpets, and for the magnificent mansion-house of the Earl of Pembroke. Woollens, and especially fine cloths, are extensively manufactured at *Devizes, Bradford, Trowbridge, Warminster, Westbury,* and all the adjacent towns, from *Chippenham* to *Heytesbury. Melksham,* situate on the Avon, was once famed for its manufacture of fine cloth, which has now declined. It has two mineral springs of some repute. The ancient parliamentary boroughs, *Marlborough* on the Kennet, *Malmsbury* on the Avon, and *Cricklade,* at the junction of the Churn and Key with the Thames, are not remarkable either for populousness or trade. At *Avebury* or *Abury,* on Marlborough downs, a few miles west of the town of that name, is the most magnificent druidical temple in Britain, consisting, like Stone-henge, of concentric circles of large upright stones, but without the imposts or lintels. Immediately in front of it appears the vast mound called Silbury-hill, supposed to be spoken of in the Welsh Triads as the third great work of the kingdom.

§ 42. *Worcestershire.*

Worcester, an episcopal city, and the county town, is agreeably situate on rising ground, on the eastern bank of the Severn, 111 miles N.W. by W. of London. The cathedral is a spacious structure, built in the form of a double cross, with a square tower rising from the intersection of the western transept with the nave and choir. It was originally founded in 1084, and subsequently altered and enlarged. Worcester is noted for the manufacture of porcelain, or china ware, and gloves. *Kidderminster,* a large and populous town, stands on the river Stour, not far from its junction with the Severn. It was noted, in the reign of Henry VIII., for the manufacture of broadcloth, afterwards for that of linsey-woolsey, and more recently for crapes, bombazines, and poplins. In 1735 the manufacture of Scotch carpeting was introduced, and afterwards that of cut carpets, which, having been invented here, have obtained the name of Kidderminster carpets. Brussels carpets are likewise made in a style of excellence highly creditable to the skill and taste of the manufacturers, and are said to be unrivalled for elegance of design and permanency and brilliance of colour. *Evesham,* an ancient borough, stands on a gentle acclivity, which rises from the Avon, in the midst of the delightful Vale of Evesham, 99 miles N.W. of London. The town is nearly surrounded with gardens, the produce of which is sent to Tewkesbury, Cheltenham, and other places. *Dudley,* a market-town, in a part of the county nearly surrounded by Staffordshire, is well built, and has considerable manufactures of nails, hardware, and glass. *Stourbridge,* in the northern part of the county, is also engaged in the same manufactures. *Droitwich,* situate near the line of the Birmingham canal, still maintains that importance which it derived from its salt-works, even at so early a period as that of the Britons; its brine springs yield annually a revenue of £150,000. The inhabitants of *Bewdley* are engaged principally in the carrying trade on the Severn. *Malvern,* on the western boundary of the county, is noted for its medicinal springs.

§ 43. *Yorkshire.*

Yorkshire, equal in point of size to five or six of the other counties of England, is principally divided into three great districts, called severally the *North, East,* and *West Ridings.* A fourth district, called the *Ainstey of York,* which contains the capital of the county, is situate at the junction of the three Ridings, and comprehends a small district bounded by the Ouse, Nid, and Wharfe; but it was, along with the liberty of St. Peter, a small adjoining district, by the Parliamentary Reform Act annexed to the North Riding. The principal places in the North Riding are the sea-ports of Whitby and Scarborough, and the inland towns Malton, Northallerton, Thirsk, and Richmond. The East Riding contains the sea-ports of Hull and Brid-

lington, and the inland towns Beverley, Driffield, Weighton Market, and some others of no great size. The West Riding, the most important of the divisions of the county, includes the port of Goole, and a large number of manufacturing and trading places,* the principal of which we shall notice in the following brief details regarding the cities and towns of Yorkshire collectively.

York, the capital of the county, and an archbishop's see, is situate on both sides of the Ouse, in the north-east of the Ainstey, 60 miles from the sea, and 196 north of London. It is surrounded by ancient walls, in which are four gates or bars, and five posterns. It is a place of very great antiquity, the *Eboracum* of the Romans, and at the time of the Norman conquest was the first city in Britain. It is now chiefly remarkable for its celebrated minster, or cathedral church of St. Peter, a gothic building of almost unrivalled beauty, in the usual form of a cross, with one central square tower, and two at the west end. The guildhall of the city, built in 1446, is likewise a magnificent building, supported by two rows of oak pillars, each the stem of a single tree. The area of the castle, which was formerly a place of great strength, is now occupied by buildings used for the county courts, assizes, jails, and bridewell. The mayor bears the title of Lord by a grant of King Richard II. In point of rank, York is deemed the second city in England; and though now surpassed in wealth and amount of population by many of the more modern trading towns, still maintains a considerable degree of consequence, and forms a sort of metropolis for the northern counties. To the west of the city is *Marston-moor*, where Prince Rupert was defeated by the army of the Parliament in 1644. *Leeds*, an ancient town in the West Riding, upon the river Aire, 24 miles southwest of York, and 190 from London, is the great emporium of the cloth manufacture. Though regarded as the capital of this great manufacturing district, Leeds is not in the centre, but stands on the north-eastern border. To the eastward and northward the country is wholly agricultural; but the county to the westward and south-west is covered with populous towns and villages, which resound with the steam-engine and the shuttle, and are constantly enveloped in clouds of smoke. The manufactures of Leeds itself are principally that of woollen cloth and worsted stuffs; but the merchants are also extensive purchasers of the woollen and stuff goods made in the neighbouring towns and villages, which they dye and finish, and thus render the town a general mart for all those fabrics. The operatives employed in all these branches of manufacture and trade, except the stuff weavers, generally earn good wages, and thus have the means of living comfortably. The town is irregularly built; but some of its edifices are handsome, and the increase of trade has given rise to a spirit of improvement among the inhabitants, which is likely to remove its defects and increase its beauty. The most important clothing towns are all situate in the immediate vicinity of Leeds: A circle, having a radius of eleven miles, will include *Leeds*, *Bradford*, *Halifax*, *Huddersfield*, and *Wakefield*, and the smaller though not less thriving towns of *Keighley*, *Bingley*, and *Dewsbury*, the united population of the whole of which, including that of five of their principal dependent villages engaged in the cloth manufacture, was at the period of the last census not less than 306,000. Nor is the industry of these towns confined entirely to the cloth trade. In Leeds there are several manufactories of linen and cotton stuffs, of Scotch and Wilton carpets, and extensive potteries, from which both the home and foreign markets are partly supplied: *Bradford* is the seat of numerous worsted manufactures, supposed to be more extensive and varied than those of any other town in Yorkshire; *Wakefield* carries on a great trade in corn and coal, and it is also a mart for the wool imported from different parts of the kingdom for the use of the Yorkshire manufacturers; and in *Halifax* many shalloons are woven for the Turkey market. In the immediate neighbourhood of Bradford are the extensive forges of *Low Moor* and *Bowling*, employed chiefly in the fabrication of steam-engines, and in that respect only less considerable than the great works of Bolton and Watt at Birmingham. *Rotherham* and *Barnsley*, connected with Sheffield by the Sheffield and Dearne and Dove Canals, contain many founderies and steel manufactories; the inhabitants of the latter town have of late, however, directed their attention to the linen manufacture. *Sheffield* is situate on a finely wooded eminence, which rises from a valley sheltered by lofty hills, near the confluence of the rivers Don and Sheaf, and 162 miles N.N.W. of London. The streets are narrow, and some of the houses old, but they generally present a tolerable appearance. It is a place of great antiquity, and was the chief town of Hallamshire. Sheffield has been famous from the earliest period for the manufacture of cutlery. Arrow-heads and whittles were the earliest

* See *ante*, pp. 204, 205: Also our table of the Statistics of the United Kingdom, in which the names of the principal towns in each of the Ridings, and their respective populations, are given.

articles fabricated here; but from these the manufacture has extended to cutlery of every description, from the largest agricultural instruments, to the finest required by the surgeon or the mathematician; as well as to every kind of plated and Britannia-metal wares, buttons, wires, steam-boilers, printing-presses, types, &c. There are also extensive manufactures of carpets and horse-hair cloth. *Doncaster*, 37 miles S. by W. of York, is a large and handsome town on the Don, celebrated for horse-races, which have been held here since the year 1703. *Ripon*, a bishop's see, is a small but ancient borough and market-town, 212 miles N.W. of London. The church is a spacious building, in the form of a cross, with a square central and two western towers. Near the town is a handsome stone bridge of 17 arches, over the river Ure. *Pontefract* or *Pomfret*, the former ancient fortress of which was the scene of many dismal historical events, is at present a thriving town possessing a considerable local trade. *Knaresborough*, a large and handsome town on the north-east bank of the Nidd, is celebrated for a dropping or petrifying spring, the water of which incrusts in a short time any substance on which it falls. In Knaresborough Forest, about three miles west from the town, is the village of *Harrowgate*, celebrated for its mineral springs. Some of the waters are chalybeate; but the one which enjoys the greatest celebrity is sulphureous. It is chiefly used for bathing, in cases of rheumatism, palsy, scorbutic and cutaneous diseases, in the cure of which it is said to possess considerable efficacy. *Beverley*, the capital of the East Riding, is a handsome and well-built town, 28 miles E. by S. of York. Its parish church, popularly called Beverley minster, is pronounced by many architects and antiquaries to be inferior to that of York in size only, and is particularly celebrated for the beauty of its western front and north porch. In the North Riding, *Malton*, on the Derwent, *Northallerton*, on the Wiske, *Thirsk*, on the Codbeck, and *Richmond*, on the Swale, possess some thriving manufactures of malt, linen, hats, and leather, but their principal trade is in grain. *Richmond* gives the ducal title to the family of Lennox. The maritime towns of Yorkshire remain to be noticed. *Kingston-upon-Hull*, or simply *Hull*, one of the principal seaports in the kingdom, in the East Riding, is situate at the mouth of the small river Hull, on the northern shore of the Humber. It was formerly surrounded with fortifications, the only part of which now remaining is the citadel, situate in the eastern angle formed by the Humber and the mouth of the Hull. In the old town, within the enclosure of the walls, the streets are narrow, and the houses ill-built; but the new portion of the town, without the walls, consists of handsome and commodious houses arranged in regular streets. The site of the fortifications along the north and west sides of the old town, is now occupied by a range of spacious docks, which, with their warehouses, are inferior only to those of London and Liverpool. The building and equipment of ships is an important branch of trade; and an extensive commerce is maintained with Russia, Prussia, Sweden, and Denmark. Hull likewise carries on a considerable trade with the West Indies, South America, the United States, the Mediterranean, Holland, and Belgium; and has for some time taken the lead in the northern whale fisheries. *Whitby* is a sea-port of great antiquity, on the north-east coast of Yorkshire, at the mouth of the river Esk, which forms its harbour. It formerly maintained a considerable trade, which has declined very much of late years. *Scarborough*, on the north side of a beautiful and extensive bay, stands on the slope of a hill which rises gently from the shore. It is a well-built handsome town, with a harbour which is easily accessible, and enjoys a considerable trade. It is a place of great resort in summer for sea-bathing, and is also frequented by invalids on account of drinking its mineral springs; these are two in number, one chalybeate, the other saline, and rise on the sea at the foot of the cliff, a little to the south of the town. *Goole* stands on the Ouse, at its confluence with the Don, about 22 miles west of Hull, to which it promises to become a formidable rival. It has grown up within a few years, and is already provided with docks and bonded warehouses. The situation is more convenient than that of Hull for communicating with the inland navigation of Yorkshire, but is attended with some disadvantages, arising from the difficult navigation of the Ouse and Humber. By the assistance of the tide, however, vessels drawing 15 or even 17 feet water can reach the harbour in safety. Some miles higher up the Ouse, and situate in the line of the great northern road, the little port of *Selby* is of some consequence in respect to the trade of the West Riding. Hull, Goole, Scarborough, and Whitby, already noticed, hold the rank of out-ports. The only other out-port in Yorkshire is *Bridlington*, in the East Riding, a place of some note in the corn trade, but possessing a limited share of foreign commerce. York is the electoral capital of the North, Beverley of the East, and Wakefield of the West Ridings.

§ 44. *Wales.*

Swansea is a handsome and prosperous seaport in Glamorganshire, on the northern shore of the Bristol Channel, 206 miles west of London. It is a modern well-built town, with a salubrious climate, and an extensive beach of firm sand, on which account it is much frequented by valetudinarians and sea-bathers. It possesses a considerable trade; the smelting of copper is carried on to a great extent; and besides the copper-works, the town contains also iron founderies, tanneries, breweries, and soap manufactories. *Merthyr-Tydvil*, in the same county, has grown up in a few years from an insignificant village to a large and populous town, whose inhabitants are principally employed in the extensive iron founderies. *Cardiff*, a flourishing seaport in Glamorganshire. *St. David's*, a poor village, though a bishop's see, in Pembrokeshire. *St. Asaph*, also a bishop's see, in Flintshire, is a small town, consisting of little more than a single street. *Holywell*, a thriving manufacturing town in Flintshire, derives its name from the well of St. Winifred, which, bursting up within an area of two yards in diameter, produces 84 hogsheads of water a-minute, forms instantly a tolerable river, and is not subject to any increase or diminution from the drought or moisture of the seasons. It was formerly held in great repute for miraculous cures; but is now more usefully employed in driving the machinery of a series of mills. *Bangor*, in Caernarvonshire, is a small episcopal city, at the northern entrance of the Menai Strait. *Conway*, an ancient walled town in the same county, is chiefly remarkable for the picturesque and extensive ruins of a castle built by King Edward I. *Carnarvon* is entirely surrounded by magnificent walls, and contains a castle erected by the same monarch. *Amlwch*, in Anglesea, has grown into a considerable town since the discovery of the rich mine of copper in the Parys mountain, and possesses a harbour cut in the solid rock, capable of containing 30 vessels of 200 tons burden. *Holyhead*, a small town on an island at the west side of Anglesea, is the station of the Dublin packets, for whose accommodation a harbour has been constructed at the public expense. *Lampeter* (Llanbedr), a small town of Cardiganshire, has been chosen for the site of St. David's college, founded in 1822 by Dr. Burgess, the bishop of that see, for the education of Welsh clergymen. It has accommodation for 100 scholars. *Brecon*, a populous town, containing a considerable armory, is the county town of Brecknockshire. *Haverford West*, also a populous place in Pembrokeshire, is picturesquely situate on the West Cleddare river. *Llanidloes* and *Newton* or *Tre-Newydd*, in Montgomeryshire, are noted for their manufactures of flannel, the principal mart for which is the thriving town of *Welshpool*, in the same county. Cardiff and Swansea, already noticed, are two of the principal outports of Wales; the other outports are *Milford*, in Pembrokeshire; *Beaumaris*, in Anglesea, and of which Amlwch and Holyhead, in the same county, Carnarvon, *Pwllhely*, and *Conway*, in Carnarvonshire, and *Barmouth* in Merionethshire, are sub-ports, *Llanelly*, in Carmarthenshire; and *Cardigan* and *Aberystwith* in Cardiganshire.

§ 45. *Isle of Wight.*

This large and beautiful island, sometimes called the garden of England, was formerly included in Hampshire, from the mainland of which it is separated by the Solent and Spithead road; but by the Parliamentary Reform Act, in 1832, it was formed into a county of itself, sending one member to the Commons House of Parliament. The principal places in the island are—*Cowes* (East and West), two towns on the opposite sides of the mouth of the Medina river, on the north side of the island. Their harbour is one of the best and most convenient in the British Channel. *Yarmouth*, on the north-west side of the island, a very small town, was formerly a borough, and sent two members to Parliament. *Newport*, a borough and market-town, nearly in the centre of the island, occupies a delightful situation on the Medina, which falls into the sea seven miles below the town. *Carisbrook Castle*, an ancient edifice, and the place where King Charles I. was imprisoned immediately before his trial, is one mile south-west of Newport. *East Cowes* ranks among the outports of the kingdom.

§ 46. *Isle of Man.*

The *Isle of Man* is divided into two nearly equal portions by a chain of mountains, the highest of which, Sneafell, rises 2004 feet above the level of the sea. The climate is milder, particularly in winter, than in the adjacent parts of Great Britain and Ireland. Frost and snow are rare; and, when they do occur, are but of short continuance. The government, institutions, and laws, are in many respects peculiar. The legislative and judicial authority is chiefly vested in the House of Keys, a self-elected body of 24 members, who hold their seats for life. Common and criminal

cases are however decided by the deemsters, two officers of great antiquity and importance. The island is under charge of a governor, assisted by a council of four or six official members: the keys, deemsters, governor, and council, constitute the Parliament or Tynwald Court of the island, which still possesses considerable privileges. A grand court is held annually at midsummer, at the Tynwald Mount, near Peel, and no law is binding till it has been publicly read and proclaimed at this assembly. The Manx language, still in common use, is a dialect of the Celtic, but has a greater affinity to the Erse and Irish than to the Welsh and Armoric.

Castletown, the capital, as being the usual residence of the governor, is situate on the southern coast; its port is difficult of access; and its population in 1831 did not exceed 2000 inhabitants. *Douglas*, on the south-eastern coast, contained nearly 6000 inhabitants; its harbour can admit the largest vessels; and it is defended by a strong fort, which renders the place impregnable on the side of the sea. *Ramsay*, situate 16 miles to the north of Douglas, has a small and inconvenient harbour; its population has never been specified. There are custom-houses or revenue stations at Douglas and Ramsay; also at *Peel* on the north coast, and *Darby Haven* near Castletown.

§ 47. *Berwick-upon-Tweed.*

Till 1832, the town and territory of Berwick-upon-Tweed, though subject to the laws of England, and within the diocese of Durham, was always considered as a separate district, not attached to any county; and was always mentioned by name in acts of Parliament along with England and Wales. *Berwick* is an ancient borough of great historical repute, situate on the northern bank of the Tweed, about half a mile from its mouth, and is 337 miles N. by W. of London, and 60 S.E. of Edinburgh. The river is here crossed by a bridge 947 feet long, and consisting of fifteen arches. The principal part of the town is surrounded by modern fortifications, which have been dismantled, and are fast going to ruin. The remains of its celebrated castle stand on a bank to the north-west of the town. A long pier or mole of solid stone-work, with a lighthouse at the extremity, has been recently constructed at the mouth of the river; but the quay for shipping is close by the bridge in front of the town. Berwick was formerly famous for its salmon-fishery, but for the last 20 years this has very much declined in value. The territory of the borough extends about three miles along the sea-coast northward, and as much along the Tweed westward; and, by a treaty in 1551, was declared independent of both kingdoms. Previous to that period, Berwick was the chief town of Berwickshire in Scotland, and one of the principal royal burghs of that kingdom. By the Parliamentary and Municipal Reform Acts, the villages of *Tweedmouth* and *Spittal*, on the south side of the Tweed, in the county of Durham, have been annexed to the municipal limits of Berwick, thereby raising the population of the borough to 12,920; and for the purposes of the Parliamentary Reform Act, the whole district has been annexed to Northumberland. To the westward of the town, the celebrated battle-field of *Halidonhill* rises to a considerable height from the north bank of the Tweed. Berwick is an outport.

§ 48. *The Norman or Channel Islands.*

(See page 181.)—*Jersey* is fertile, well wooded, and presents a rich and beautiful appearance. *Guernsey* is less fertile, and has much less wood; but it also possesses a considerable extent of productive soil. *Alderney*, *Sark*, and *Herm*, are smaller islands of little consequence, though Alderney is noted for a particular breed of cows. These islands are all surrounded by rocks, which occasion the navigation among them to be rather intricate and dangerous. From the various privileges which they enjoy, particularly their almost total exemption from taxation, and their being allowed to import into England and its colonies all articles of the growth, produce, or manufacture of the islands, on the same footing as other British subjects, and their favourable situation for carrying on a contraband trade, their commerce is extensive and important. The natives speak corrupt French, and are industrious and penurious. These islands are a very costly appendage to the British crown; they have been fortified at an immense expense; and, during the last war, the defence of them is said to have cost so much as £500,000 a-year, while their total annual revenue did not amount to £20,000. The principal places are—*St. Helier*, in Jersey, the seat of government of that island, which is the principal military depot, and the centre of the insular commerce, amusement, and fashion. It is a neat modern town, consisting of several streets, which diverge from a square ornamented with a gilt statue of George II. *St. Pierre*, in Guernsey, stands on the east side of the island, and has a good harbour, and a college, which was founded by Queen Elizabeth, and has been recently rebuilt. *St. Anne*, a small place, the capital of Alderney.

PARLIAMENTARY REPRESENTATION.—Before the passing of the Parliamentary reform bill in 1832, the English portion of the House of Commons consisted of two different classes of representatives: 1. Knights of the shire, of whom there were two for each county of England, and one for each county of Wales, elected by the freeholders, or tenants of the Sovercign *in capite;* and, 2. The representatives of cities and boroughs, who were eleeted generally by the livery or freemen, but in some eases by the inhabitants paying scot and lot; sometimes by the proprietor of the borough, or otherwise. By the Reform Act, two representatives were allotted to eaeh of the three ridings of Yorkshire, and each of the Welsh counties of Carmarthen, Denbigh, and Glamorgan; twenty-six English counties, namely, Chester, Cornwall, Cumberland, Derby, Devon, Durham, Essex, Gloster, Hants, Kent, Lancashire, Leicester, Lincoln, Norfolk, Northampton, Northumberland, Notts, Salop, Somerset, Stafford, Suffolk, Surrey, Sussex, Warwick, Wilts and Worcester, were eaeh divided into two electoral districts, with two representatives. Three representatives were given to eaeh of the counties of Berks, Bucks, Cambridge, Dorset, Hereford, Hertford, and Oxford. The remaining six counties of England, namely, Bedford, Huntingdon, Middlesex, Monmouth, Rutland, and Westmoreland, retained two each. The remaining nine counties of Wales retained one each; and one was allotted to the Isle of Wight as a county of itself. The following is an alphabetically arranged —

LIST of the PARLIAMENTARY CITIES and BOROUGHS of ENGLAND and WALES, with the Number of Members which they return, the Number of their Registered Electors, and their Population in 1841.

Cities or Boroughs.	*Members.*	*Electors.*	*Population.*
Abingdon, *Berks*	1..	321..	5,585
Albans. *See* St. Albans.			
Andover, *Hants*	2..	134..	5,013
Arundel, *Sussex*	1..	312..	2,628
Ashburton, *Devon*	1..	280..	3,841
Ashton-under-Lyne, *Lanc.*	1..	713..	22,678
Aylesbury, *Bucks*	2..	1,624..	5,429
Banbury, *Oxford*	1..	385..	6,753
Barnstaple, *Devon*	2..	807..	7,902
Bassetlaw, *Notts*	2..	2,822..	37,245
Bath, *Som.*	2..	2,985..	38,304
Beaumaris (District of), *Ang.*	1..	298..	2,710 bor. 14,551 dist.
Bedford, *Bed.*	2..	826..	9,178
Berwick-upon-Tweed	2..	714..	8,484
Beverley, *York.*	2..	1,073..	8,730
Bewdley, *Wor.*	1..	411..	3,400
Birmingham, *War.*	2..	5,870..	182,922
Blackburn, *Lanc.*	2..	906..	36,629
Bodmin, *Corn.*	2..	368..	4,643
Bolton, *Lanc.*	2..	1,405..	33,610
Boston, *Linc.*	2..	1,146..	12,942
Bradford, *York.*	2..	1,398..	34,560
Brecon, *Brecon*	1..	331..	5,354
Bridgewater, *Som.*	2..	595..	10,449
Bridgenorth, *Salop*	2..	810..	6,198
Bridport, *Dorset*	2..	557..	4,787
Brighton, *Sussex*	2..	2,403..	46,661
Bristol, *Glouc.*	2..	11,150..	64,266
Buckingham, *Bucks*	2..	396..	4,054
Bury, *Lanc.*	1..	768..	20,710
Bury St. Edmunds, *Suff.*	2..	713..	12,538
Calne, *Wilts*	1..	176..	5,128
Cambridge, *Cam.*	2..	1,940..	24,453
Canterbury, *Kent*	2..	1,918..	15,435
Cardiff (Dist. of), *Glam.*	1..	590..	10,077 bor. 16,520 dist.
Cardigan (Dist. of), *Card.*	1..	832..	2,925 bor. 9,500 dist.
Carlisle, *Cumb.*	2..	651..	23,012
Carmarthen (Distr. of), *Carm.*	1..	938..	9,526 bor. 20,681 dist.
Carnarvon (District of), *Carn.*	1..	1,021..	9,192 bor. 22,616 dist.
Chatham, *Kent*	1..	862..	21,431
Cheltenham, *Glouc.*	1..	2,003..	31,411
Chester, *Cheshire*	2..	2,298..	23,115
Chichester, *Sussex*	2..	884..	8,512
Chippenham, *Wilts*	2..	267..	5,438
Christchurch, *Hants*	1..	300..	5,594
Cirencester, *Glouc.*	2..	586..	6,014
Clitheroe, *Lanc.*	1..	387..	6,765
Cockermouth, *Cumb.*	2..	293..	4,940
Colchester, *Essex*	2..	1,176..	17,790
Coventry, *War.*	2..	3,789..	30,743
Cricklade, *Wilts*	2..	1,663..	2,128
Dartmouth, *Devon*	1..	276..	4,595
Denbigh (Dist. of), *Denb.*	1..	908..	3,405 bor. 11,534 dist.
Derby, *Derby*	2..	1,906..	32,741
Devizes, *Wilts*	2..	266..	4,631
Devonport, *Devon*	2..	2,131..	43,532
Dorchester, *Dorset*	2..	367..	3,249
Dover, *Kent*	2..	1,857..	13,872
Droitwich, *Worc.*	1..	347..	2,814
Dudley, *Worc.*	1..	971..	31,232
Durham, *Dur.*	2..	1,022..	14,151
Evesham, *Worc.*	2..	335..	4,245
Exeter, *Devon*	2..	3,698..	31,312
Eye, *Suff.*	1..	342..	2,493
Finsbury, *Midd.*	2..	13,300..	219,482
Flint (Distr. of), *Flint.*	1..	1,006..	2,860 bor. 26,200 dist.
Frome, *Som.*	1..	340..	11,849
Gateshead, *Dur.*	1..	554..	19,505
Gloucester, *Glouc.*	2..	1,876..	14,152
Grantham, *Linc.*	2..	678..	8,691
Greenwich, *Kent*	2..	3,811..	29,755
Grimsby, Great, *Linc.*	1..	573..	3,700
Guildford, *Sussex*	2..	486..	4,074
Halifax, *York.*	2..	899..	19,881
Harwich, *Essex*	2..	186..	3,829
Hastings, *Sussex*	2..	952..	11,607
Haverford West (Dist. of) *Pembroke*	1..	722..	4,601 bor. 10,832 dist.
Helston, *Corn.*	1..	398..	3,584
Hereford, *Hereford*	2..	961..	10,921
Hertford, *Herts*	2..	619..	5,450
Honiton, *Devon*	2..	440..	3,895
Horsham, *Sussex*	1..	377..	5,765
Huddersfield, *York.*	1..	1,003..	25,068
Hull, *York.*	2..	4,862..	61,807
Huntingdon, *Hunt.*	2..	416..	3,507
Hythe, *Kent*	1..	513..	2,265

NOTES.

Chatham.—The return for Chatham ineludes 5,463 males in barracks, &c.

London.—The return for London is made by the Registrars for the City, and East and West London. The strict accuracy of this cannot depended on as the positive population for the Parliamentary Borough. The total population of both sexes in the Metropolis is 1,873,844.

Cities or Boroughs.	Members.	Electors.	Population.
Ipswich, *Suff.*	2..	1,587..	25,384
Ives. *See* St. Ives.			
Kendal, *Westmor.*	1..	353..	10,225
Kidderminster, *Worc*	1..	482..	14,399
Knaresborough, *York*	2..	241..	4,678
Lambeth, *Surrey*	2..	7,731..	201,910
Lancaster, *Lanc*	2..	1,296..	13,531
Launceston, *Corn.*	1..	342 :	2,460
Leeds, *York*	2..	6,316..	152,054
Leicester, *Leic*	2..	3,581..	48,167
Leominster, *Hereford*	2..	619..	3,892
Lewes, *Sussex*	2..	853..	9,199
Lichfield, *Staff*	2..	646..	6,711
Lincoln, *Linc.*	2..	1,023 :	16,172
Liskeard, *Corn*	1..	296..	4,287
Liverpool, *Lanc.*	2..	15,539..	286,487
London, *Middles.*	4..	19,068..	129,251
Ludlow, *Salop*	2..	415..	5,064
Lyme-Regis, *Dorset*	2..	277..	2,756
Lymington, *Hants*	2..	307..	3,813
Lynn-Regis, *Norfolk*	2..	950..	16,039
Macclesfield, *Chest*	2..	894..	24,137
Maidstone, *Kent*	2..	1,660..	18,068
Maldon, *Essex*	2..	855..	3,967
Malmesbury, *Wilts*	1..	315..	6,136
Malton, *York*	2..	572..	4,021
Manchester, *Lanc.*	2..	10,818..	242,983
Marlborough, *Wilts*	2..	282..	3,391
Marlow (Great), *Bucks*	2..	369..	4,480
Marylebone, *Middles.*	2..	11,570..	293,100
Merthyr-Tydvil, *Glam.*	1..	776..	34,977
Midhurst, *Sussex*	1..	289..	1,536
Monmouth, *Mon.*	1..	1,268..	5,446
Montgomery (District of), *Mont*	1..	995..	1,208 bor. 18,425 dist.
Morpeth, *Northumb.*	1..	392..	4,237
Newark-on-Trent, *Notts*	2..	1,116..	10,220
Newcastle-under-Lyne, *Staff.*	2..	1,038..	9,838
Newcastle-upon-Tyne, *Northumb.*	2..	5,124..	49,860
Newport, *Wight*	2..	750..	3,858
New Radnor (District of), *Radnor*	1..	578..	2,433 bor. 8,410 dist.
Northallerton, *York*	1..	281..	3,061
Northampton, *Northamp.*	2..	1,997..	21,242
Norwich, *Norf*	2..	4,390..	62,344
Nottingham, *Notts*	2..	4,678..	53,091
Oldham, *Lanc*	2..	1,467..	42,595
Oxford, *Oxford*	2..	2,786..	23,834
Pembroke (District of), *Pemb.*	1..	1,134..	8,126 bor. 12,366 dist.
Penryn & Falmouth, *Corn.*	2..	884..	8,181
Peterborough, *Northamp.*	2..	576..	6,107
Petersfield, *Hants*	1..	352..	1,838
Plymouth, *Devon*	2..	1,903..	36,527
Pontefract, *York*	2..	712..	4,669
Poole, *Dorset*	2..	469..	6,093
Portsmouth, *Hants*	2..	1,834..	53,058
Preston, *Lanc.*	2..	3,371..	50,131
Reading, *Berks*	2..	1,194..	18,937
Reigate, *Surrey*	1..	199..	1,604
Retford, (East.) *See* Bassetlaw.			
Richmond, *York*	2..	284..	3,992
Ripon, *York*	2..	373..	5,461
Rochdale, *Lanc*	1..	942..	24,794
Rochester, *Kent*	2..	1,016..	11,743
Rye & Winchelsea, *Sussex*	1..	572..	8,538
St. Albans, *Herts*	2..	500..	6,497
St. Ives, *Corn*	1..	600..	5,666
Salford, *Lanc*	1..	2,443..	53,200
Salisbury, *Wilts*	2..	613..	10,068
Sandwich (Distr.) *Kent*	2..	952..	12,183
Scarborough, *York*	2..	564..	10,060
Shaftesbury, *Dorset*	1..	497..	3,170
Sheffield, *York*	2..	4,347..	68,186
Shields (South.) *See* South Shields.			
Shoreham, *Sussex*	2..	1,918..	1,998
Shrewsbury, *Salop*	2..	1,564..	18,297
Southampton, *Hants*	2..	1,563..	27,744
South Shields, *Dur*	1..	667..	9,082
Southwark, *Surrey*	2..	5,124..	182,831
Stafford, *Staff*	2..	1,154..	9,245
Stamford, *Linc*	2..	661..	6,385
Stockport, *Ches.*	2..	1,238..	28,431
Stoke-on-Trent, *Staff*	2..	1,682..	61,446
Stroud, *Glouc*	2..	1,224..	8,680
Sudbury, *Suff*	2..	603..	5,928
Sunderland, *Dur*	2..	1,691..	17,022
Swansea (Dist. of), *Glam.*	1..	1,287..	17,470 bor. 23,268 dist.
Tamworth, *War*	2..	485..	7,900
Taunton, *Som*	2..	856..	12,066
Tavistock, *Devon*	2..	275..	6,272
Tewkesbury, *Glouc*	2..	507..	5,862
Thetford, *Norf*	2..	156..	3,934
Thirsk, *York*	1..	328..	3,020
Tiverton, *Devon*	2..	478..	10,040
Totness, *Devon*	2..	391..	3,849
Towerhamlets, *Midd.*	2..	13,842..	428,316
Truro, *Corn*	2..	622..	3,043
Tynemouth, *Northumb.*	1..	709..	25,416
Wakefield, *York*	1..	837..	14,754
Wallingford, *Berks*	1..	386..	2,780
Walsall, *Staff*	1..	808..	7,395
Wareham, *Dorset*	1..	438..	2,746
Warrington, *Lanc*	1..	634..	3,913
Warwick, *War*	2..	957..	9,775
Wells, *Som*	2..	346..	7,050
Wenlock, *Salop*	2..	961..	18,016
Westbury, *Wilts*	1..	213..	7,588
Westminster, *Midd.*	2..	13,767..	226,344
Weymouth, *Dorset*	2..	598..	2,669
Whitby, *York*	1..	424..	7,383
Whitehaven, *Cumb*	1..	558..	11,854
Wigan, *Lanc*	2..	586..	25,517
Wilton, *Wilts*	1..	194..	8,253
Winchester, *Hants*	2..	567..	10,732
Windsor, *Berks*	2..	642..	7,786
Wolverhampton, *Staff*	2..	2,571..	70,370
Woodstock, *Oxford*	1..	356..	1,412
Worcester, *Wor*	2..	3,037..	25,793
Wycombe, *Bucks*	2..	388..	6,480
Yarmouth, *Norf*	2..	1,930..	26,991
York, *York*	2..	3,507..	28,883

NOTE. — The Welsh Parliamentary borough districts, exclusive of single boroughs forming districts by themselves are: — Beaumaris, with *Amlwch, Holyhead* and *Llangefni;* Cardiff, with *Cowbridge, Llantrissent, Aberdare* and *Llandaff;* Cardigan, with *Aberystwith, Adpar* or *Atpar* and *Lampeter;* Carmarthen, with *Llanelly;* Carnarvon, with *Conway, Criccieth, Pwllheli, Bangor,* and *Nevin;* Denbigh, with *Holt, Ruthin,* and *Wrexham;* Flint, with *Caergwryley, Caerwys, Overton, Rhudolan,* or *Rhuddlan, Holywell, Mold,* and *St Asaph;* Haverford West, with *Fishguard, Narberth,* and *St. David's;* Montgomery, with *Llanfyllen, Llanidloes, Machynleth, Newton* and *Welshpool;* Pembroke, with *Tenby, Wiston,* and *Milford;* Radnor, with *Cefn Llys, Knighton, Knucklas, Rhayder* and *Presteign;* Swansea, with *Aber-Afon* or *Abervon, Cynfig* or *Kenfig, Loughor* or *Llooghor,* and *Neath.*

The following table exhibits the Parliamentary boroughs in England and Wales previous to the passing of the Reform Act in 1832; the number of members returned by each, their constituencies in 1831, and population according to the census of 1831, being severally indicated by the prefixed letters *m. c.* and *p.* An *asterisk* is prefixed to such boroughs as now return half their former number of representatives; the names of places disfranchised in 1832 are printed in *italics.*

BEDFORDSHIRE. — Bedford, *m.* 2, *c.* 1500, *p.* 6,959.

BERKSHIRE. — Abingdon, *m.* 1, *c.* 400, *p.* 5,259; Reading, *m.* 2, *c.* 700, *p.* 15,595; *Wallingford, *m.* 2, *c.* 18), *p.* 2,467; Windsor, *m.* 2, *c.* 750, *p.* 5,191. — *Total, 4 boroughs which returned 7 members.*

BUCKINGHAMSHIRE. — *Amersham, m.* 2. *c.* 12, *p.* 2816; Aylesbury, *m.* 2, *c.* 1,000, *p.* 4,907; Buckingham, *m.* 2, *c.* 13, *p.* 3,610; Marlow (Great), *m.* 2, *c.* 235, *p.* 4,231; *Wendover, m.* 2, *c.* 140, *p.* 2,088; Wycombe, *m.* 2, *c.* 65, *p.* 3,101. — *Total, 6 boroughs, which returned 12 members.*

CAMBRIDGESHIRE. — Cambridge (City), *m.* 2, *c.* 240, *p.* 20,917; Cambridge (University), *m.* 2, *c.* 1,200. — *Total*, 1 *city and* 1 *university, which returned* 4 *members.*

CHESHIRE. — Chester, *m.* 2, *c.* 1000, *p* 21,363.

CORNWALL. — Bodmin, *m.* 2, *c.* 36, *p.* 3,782; *Bossiney*, *m.* 2, *c.* 35, *p.* 1,006; *Callinglon*, *m.* 2, *c.* 50, *p.* 1,388; *Camelford*, *m.* 2, *c.* 25, *p.* 1,359; *Fowey*, *m.* 2, *c.* 7, *p.* 1,767; *Germains* (*St.*) *m.* 2, *c.* 70, *p.* 2,586; *Helston, m.* 2, *c.* 36, *p.* 3,293; *Ives (St.) *m.* 2, *c.* 200, *p.* 4,776; *Launceston, *m.* 2, *c.* 15, *p.* 2,231; *Liskeard, *m.* 2, *c.* 105, *p.* 4,042; *Looe* (*East*), *m.* 2, *c.* 50, *p.* 865; *Looe* (*West*), *m.* 2, *c.* 55, *p.* 593; *Lostwithiel* or *Lestwithiel*, *m.* 2, *c.* 24, *p.* 1,548; *Mawes* (*St.*) *m.* 2, *c.* 20, *p.* 4,237; *Michaels* (*St.*) *m.* 2, *c.* 32, *p.*—?; *Newport*, *m.* 2. *c.* 62, *p.* 1,084; Penryn, *m.* 2, *c.* 400, *p.* 3,521; *Saltash*, *m.* 2, *c.* 36, *p.* 1,637; *Tregony*, *m.* 2, *c.* 180. *p.* 1,127; Truro, *m.* 2, *c.* 26, *p.* 2,935. — *Total*, 20 *boroughs, which returned* 40 *members.*

CUMBERLAND.—Carlisle, *m.* 2, *c.* 600, *p.* 20,006; Cockermouth, *m.* 2, *c.* 180, *p.* 4,536.— *Total*, 1 *city and* 1 *borough, which returned* 4 *members.*

DERBYSHIRE. — Derby, *m* 2, *c.* 800, *p.* 23,607.

DEVONSHIRE. — *Ashburton, *m.* 2, *c.* 170, *p.* 4,165; Barnstaple, *m.* 2, *c.* 400, *p.* 6,840; *Beeralston, m.* 2, *c.* 100, *p.* 1,876; Exeter, *m.* 2, *c.* 1,600, *p.* 28,201; Honiton, *m.* 2, *c.* 350, *p.* 3,509; *Dartmouth, *m.* 2, *c.* 100, *p.* 4,597; *Oakhampton, m.* 2, *c.* 250, *p.* 2,055; Plymouth, *m.* 2, *c.* 230, *p.* 75,534; *Plympton, m.* 2, *c.* 210, *p.* 804; Tavistock, *m.* 2, *c.* 25, *p.* 5,602; Tiverton, *m.* 2, *c.* 24, *p.* 9,766; Totness, *m.* 2, *c.* 58, *p.* 3,442.— *Total*, 1 *city and* 11 *boroughs, which returned* 24 *members.*

DORSETSHIRE. — Bridport, *m.* 2, *c.* 340, *p.* 4,247; *Corfe Castle, m.* 2, *c.* 50, *p.* 1,712; Dorchester, *m.* 2, *c.* 200, *p.* 3,033; *Lyme Regis, m.* 2, *c.* 30, *p.* 2,621; Poole, *m.* 2, *c.* 100, *p.* 6,459; *Shaftesbury, *m.* 2, *c.* 300, *p.* 3,061; *Wareham, *m.* 2, *c.* 20, *p.* 2,325; *Weymouth and Melcombe Regis, *m.* 4, *c.* 700, *p.* 7,655.— *Total*, 8 *boroughs, which returned* 18 *members.*

DURHAM. — Durham (City), *m.* 2, *c.* 1,200, *p.* 10,125.

ESSEX. — Colchester, *m.* 2, *c.* 1,800. *p.* 16.167; Harwich, *m.* 2, *c.* 32, *p.* 4,297; Maldon, *m.* 2, *c.* 2,000, *p.* 3,831.— *Total*, 3 *boroughs, which returned* 6 *members.*

GLOUCESTERSHIRE. — Bristol, *m.* 2, *c.* 8000, *p.* 59,074; Cirencester, *m.* 2, *c.* 700, *p.* 5,420; Gloucester *m.* 2, *c.* 2,200, *p.* 11,933; Tewkesbury. *m.* 2, *c.* 500, *p.* 5780.— *Total*, 2 *cities and* 2 *boroughs, which returned* 8 *members.*

HEREFORDSHIRE. — Hereford, *m.* 2, *c.* 1,200, *p.* 10,280; Leominster, *m.* 2, *c.* 700, *p.* 5,249; *Weobly, m.* 2, *c.* 90, *p.* 819.— *Total*, 1 *city and* 2 *boroughs, which returned* 6 *members.*

HERTFORDSHIRE. — Albans (St.) *m.* 2, *c.* 800, *p.* 4,772; Hertford, *m.* 2, *c.* 550, *p.* 5247.— *Total*, 2 *boroughs, which returned* 4 *members.*

HUNTINGDONSHIRE. — Huntingdon, *m.* 2, *c.* 240, *p.* 3,267.

KENT. — Canterbury, *m.* 2, *c.* 1600, *p.* 14,463; Dover, *m.* 2, *c.* 1450, *p.* 11,924; *Hythe, *m.* 2, *c.* 150, *p.* 2,287; Maidstone, *m.* 2, *c.* 900, *p.* 15,387; *Queenborough, m.* 2, *c.* 270, *p.* 518; Rochester, *m.* 2, *c.* 750, *p.* 9,891; *Romney* (*New*), *m.* 2, *c.* 150, *p.* 1,096; Sandwich, *m.* 2, *c.* 955, *p.* 3,136.— *Total*, 2 *cities and* 6 *boroughs, which returned* 16 *members.*

LANCASHIRE. — *Clitheroe, *m.* 2, *c.* 45, *p.* 5,213; Lancaster, *m.* 2, *c.* 1,700, *p.* 12,613; *Newton-in-Makerfield, m.* 2, *c.* 60, *p.* 2,139; Liverpool, *m.* 2, *c.* 4,000 ? *p.* 165,175; Preston, *m.* 2, *c.* 6,000, *p.* 33,112; Wigan, *m.* 2, *c.* 210, *p.* 20,774.— *Total*, 6 *boroughs. which returned* 12 *members.*

LEICESTERSHIRE. — Leicester, *m.* 2, *c.* 5,000, *p.* 39,306.

LINCOLNSHIRE. — Boston, *m.* 2, *c.* 400, *p.* 11,240; Grantham, *m.* 2, *c.* 800, *p.* 7,427; *Grimsby (Great), *m.* 2. *c.* 300, *p.* 4,225; Lincoln, *m.* 2, *c.* 1,300, *p.* 11,892; Stamford, *m.* 2, *c.* 540, *p.* 5,837.— *Total*, 1 *city and* 4 *boroughs, which returned* 10 *members.*

MIDDLESEX.—London, *m.* 4, *c.* 12,000, *p.* 1,236,561; Westminster, *m.* 2, *c.* 17,000, *p.* 202,891. *Total*, 2 *cities, which returned* 6 *members.*

MONMOUTHSHIRE.—Monmouth, *m.* 1, *c.* 800, *p.* 13,753.

NORFOLK. — *Castle Rising, m.* 2, *e.* 40, *p.* 358; Lynn Regis or King's Lynn, *m.* 2, *c.* 300, *p.* 13,370; Norwich, *m.* 2, *c.* 4,500, *p.* 61,110; Thetford, *m.* 2, *c.* 31, *p.* 3,462; Yarmouth (Great), *m.* 2, *c.* 1,700, *p.* 21,115.— *Total*, 1 *city and* 4 *boroughs, which returned* 10 *members.*

NORTHAMPTONSHIRE. — *Brackley*, *m.* 2, *c.* 33, *p.* 2,107; *Higham Ferrers*, *m.* 1, *c.* 145, *p.* 965; Northampton, *m.* 2, *c.* 1,000, *p.* 15,351; Peterborough, *m.* 2, *c.* 460, *p.* 5,553.— *Total*, 1 *city and* 3 *boroughs, which returned* 7 *members.*

NORTHUMBERLAND.—*Morpeth, *m.* 2, *c.* 200, *p.* 3,890; Newcastle-upon-Tyne, *m.* 2, *c.* 2,500, *p.* 42,760. — *Total*, 2 *boroughs, which returned* 4 *members.*†

NOTTINGHAMSHIRE.—Bassetlaw (Hundred of), *m.* 2, *c.* 1,750, *p.* 37,245; Newark-upon-Trent, *m.* 2, *c.* 1,600, *p.* 9,557; Nottingham, *m.* 2, *c.* 4,500, *p.* 50,680.— *Total*, 3 *boroughs, which returned* 6 *m.*

OXFORDSHIRE.—Banbury, *m.* 1, *c.* 20, *p.* 5,906; Oxford (City), *m.* 2, *c.* 1,500, *p.* 20,649; Oxford (University), *m.* 2, *c.* 1,200; *Woodstock, *m.* 2, *c.* 400, *p.* 1,380.— *Total*, 1 *city*, 1 *university, and* 2 *boroughs, which returned* 7 *members.*

SHROPSHIRE.—*Bishop's Castle, *m.* 2, *c.* 60, *p.* 2,007; Bridgenorth, *m.* 2, *c.* 800, *p.* 5,065; Ludlow, *m.* 2, *c.* 500, *p.* 5,253; Shrewsbury, *m.* 2, *c.* 1,000, *p.* 21,227; Wenlock, *m.* 2, *c.* 110, *p.* 2,421.— *Total*, 5 *boroughs, which returned* 10 *members.*

SOMERSETSHIRE.—Bath, *m.* 2, *c.* 30, *p.* 38,063; Bridgewater, *m.* 2, *c.* 300, *p* 7,807; *Ilchester, m.* 2, *c.* 70, *p.* 1,095; *Milborne Port, m.* 2, *c.* 90, *p.* 2,072; *Minehead, m.* 2, *c.* 10, *p.* 1,481; Taunton, *m.* 2, *c.* 450, *p.* 11,139; Wells, *m.* 2, *c.* 450, *p.* 6,649.— *Total*, 2 *cities and* 5 *boroughs, which returned* 14 *members.*

SOUTHAMPTONSHIRE.—Andover, *m.* 2, *c.* 24, *p.* 4,843; *Christchurch, *m.* 2, *c.* 50, *p.* 5,344; Lymington, *m.* 2, *c.* 70, *p.* 3,361; Newport (Isle of Wight), *m.* 2, *c.* 24, *p.* 4,081; *Newton* (Isle of Wight), *m.* 2. *c.* 40, *p.* 68; *Petersfield, *m.* 2, *c.* 140, *p.* 1,803; Portsmouth, *m.* 2. *c.* 100, *p.* 8,083; Southampton, *m.* 2, *c.* 800, *p.* 19,324; *Stockbridge, m.* 2, *c.* 106, *p.* 851; *Whitchurch, m.* 2, *c.* 70, *p.* 1,673; Winchester, *m.* 2, *c.* 34, *p.* 9,212; *Yurmouth* (Isle of Wight), *m.* 2, *c.* 50, *p.* 586.— *Total*, 1 *city and* 11 *boroughs, which returned* 24 *members.*

STAFFORDSHIRE. — Litchfield, *m.* 2, *c.* 600, *p.* 6,499; Newcastle-under-Lyne, *m.* 2, *c.* 700, *p.* 8,192; Stafford, *m.* 2, *c.* 600, *p.* 6,998; Tamworth, *m.* 2, *c.* 300, *p.* 7,182.— *Total*, 1 *city and* 3 *boroughs, which returned* 8 *members.*

SUFFOLK.— *Aldeburgh, m.* 2, *c.* 80, *p.* 1,341; Bury St. Edmunds, *m.* 2, *c.* 88, *p.* 11,436; *Dunwich, m.* 2, *c.* 18, *p.* 232; *Eye, *m.* 2, *c.* 100, *p.* 2,313; Ipswich, *m.* 2, *c.* 1,100, *p.* 20,454; *Orford, m.* 2, *c.* 20, *p.* 1,302; Sudbury, *m.* 2, *c.* 800, *p.* 4677.— *Total*, 7 *boroughs, which returned* 14 *members.*

SURREY.— *Bletchingly* or *Blechingly, m.* 2, *c.* 80, *p.* 1,203; Guildford, *m.* 2, *c.* 250, *p.* 3,813; *Haslemere, m.* 2, *c.* 60, *p.* 849; *Reigate or Ryegate, *m.* 2, *c.* 200, *p.* 1,419; Southwark, *m.* 2, *c.* 3,500, *p.* 91,501; *Gatton, m.* 2, *c.* 5, *p.* 145.— *Total*, 6 *boroughs, which returned* 12 *members.*

SUSSEX. — *Arundel, *m.* 2, *c.* 450, *p.* 2,803; *Bramber, m.* 2, *c.* 20, *p.* 97; Chichester, *m.* 2, *c.* 700. *p.* 8,270; *Grinstead* (*East*), *m.* 2, *c.* 30, *p.* 3,364; Hastings, *m.* 2, *c.* 200, *p.* 10,097; *Horsham, m.* 2, *c.* 25, *p.* 5,105; Lewes, *m.* 2, *e.* 400, *p.* 8,592; *Midhurst, *m.* 2, *c.* 18, *p.* 1,478; *Rye, *m.* 2, *c.* 25. *p.* 3,715; *Seaford, m.* 2, *c.* 98, *p.* 1,098; Shoreham (including Rape of Bramber), *m.* 2, *e.* 1,350, *p.* 30,113; *Steyning, m.* 2, *c.* 110, *p.* 1,436; *Winchelsea, m.* 2, *c.* 40, *p.* 772.— *Total*, 1 *city and* 12 *boroughs, which returned* 26 *members.*

† The borough of Berwick-upon-Tweed, *m.* 2, *c.* 700, *p.* 8,920, was usually considered a Northumberland borough.

WARWICKSHIRE.—Coventry, *m.* 2, *c.* 2,500, *p.* 27,070; Warwick, *m.* 2, *c.* 550, *p.* 9,109.—*Total,* 1 *city and* 1 *borough, which returned* 4 *members.*
WESTMORELAND.—*Appleby,* *m.* 2. *c.* 100, *p.* 851.
WILTSHIRE.—*Bedwin (Great),* *m.* 2, *c.* 80, *p.* 2,191; *Calne, *m.* 2, *c.* 24, *p.* 4,876; Chippenham, *m.* 2, *c.* 135, *p.* 4,333; Cricklade (including adjoining hundreds), *m.* 2, *c.* 300, *p.* 24,767; Devizes, *m.* 2, *c.* 40, *p.* 4,562; *Downton,* *m.* 2, *c.* 60, *p.* 3.652; *Heytesbury,* *m.* 2, *c.* 50, *p.* 1,412; *Hindon,* *m.* 2, *c.* 240, *p.* 921; *Ludgershall,* *m.* 2, *c.* 70, *p.* 535; *Malmesbury, *m.* 2, *c.* 13, *p.* 2,293; Marlborough, *m.* 2, *c.* 21, *p.* 3,426; Salisbury or New Sarum, *m.* 2, *c.* 54, *p.* 9,876; *Sarum (Old),* *m.* 2, *c.* 7, *p.* 0; *Westbury, *m.* 2, *c.* 70, *p.* 2,495; *Wilton, *m.* 2, *c.* 20, *p.* 1,997; *Wootten Bassett,* *m.* 2, *c.* 100, *p.* 1,896.—*Total,* 1 *city and* 15 *boroughs, which returned* 32 *members.*
WORCESTERSHIRE.—Bewdley, *m.* 1, *c.* 13, *p.* 3,908; Droitwich, *m.* 2, *c.* 12, *p.* 2,487; Evesham, *m.* 2, *c.* 600, *p.* 3,991; Worcester, *m.* 2, *c.* 2,000, *p.* 18,610.—*Total,* 1 *city and* 3 *boroughs, which returned* 7 *members.*
YORKSHIRE—*Aldborough,* *m.* 2, *c.* 60, *p.* 620; Beverley, *m.* 2, *c.* 1,180, *p.* 8,302; *Boroughbridge,* *m.* 2, *c.* 50, *p.* 950; *Hedon,* *m.* 2. *c.* 380, *p.* 1,080; Hull, or Kingston-upon-Hull, *m.* 2, *c.* 1,700, *p.* 32,958; Knaresborough, *m.* 2, *c.* 110, *p.* 5,926; Malton, *m.* 2, *c.* 270, *p.* 4,173; *Northallerton, *m.* 2, *c.* 200, *p.* 3,004; Pontefract, *m.* 2, *c.* 620, *p.* 4,832; Richmond, *m.* 2, *c.* 270, *p.* 3,900; Ripon, *m.* 2, *c.* 150, *p.* 5,080; Scarborough, *m.* 2, *c.* 44, *p.* 8,760; *Thirsk, *m.* 2, *c.* 60, *p.* 2,835; York, *m.* 2, *c.* 3,500, *p.* 25,359.—*Total* 1 *city and* 13 *boroughs, which returned* 28 *members.*
WELSH BOROUGHS.—Beaumaris (Anglesea), *c.* 24; Brecon (Brecknockshire), *c.* 700; Cardiff (Glamorganshire), jointly with Aberavon, Cowbridge, Llan-Trissaint, Neath, Swansea, &c. in the same county, *c.* 1,200; Cardigan (Cardiganshire), jointly with Aberystwith and Atpar in the same county, *c.* 1,500; Carmarthen (Carmarthenshire), *c.* 160; Carnarvon (Carnarvonshire), jointly with Conway, Nevin, Criccieth, and Pwllhelly in the same county, *c.* 800; Denbigh (Denbighshire), jointly with Ruthin and Holt in the same county, *c.* 1,000; Flint (Flintshire), jointly with Rhuddlan, Overton, Caergurley and Caerwys in the same county, *c.* ?; Haverfordwest (Pembrokeshire), *c.* 500; Montgomery (Montgomeryshire), *c.* 80; New Radnor (Radnorshire), jointly with Knighton, Cefn-Llys, Rhayadyr, &c. in the same county, *c.* 1,150; Pembroke (Pembrokeshire), jointly with Tenby and Wiston in the same county, *c.* 500.—*Total,* 12 *boroughs or borough districts, which returned* 1 *member each.*

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§ 2. *Scotland.*

ASTRONOMICAL POSITION.—The mainland between 54° 41′ and 58° 41′ north latitude; and 1° 43′ and 5° 38′ west longitude. Including the islands, Scotland extends to 60° 49′ north latitude, and 8° 55′ * west longitude.

DIMENSIONS.—The *longest line* which can be drawn on the mainland of Scotland is 280 miles, from the Mull of Galloway, its south-western extremity, to Dunnet Head, its most northerly point. The *greatest length* measured along the meridian, is 274 miles from the Mull of Galloway to Cape Wrath. The *breadth* is very variable, the greatest being 146 miles from Buchan-ness in Aberdeenshire to the most westerly point of Ross-shire; but the country is so penetrated by firths and lochs, or inlets of the sea, that there is actually no place in Scotland more than forty miles inland. From the extreme irregularity of its figure, and the want of accurate surveys, great difference of opinion has existed respecting the extent of the *superficial area* of Scotland. Probably as near an approximation as can be made, is to assign 25,520 square miles to the mainland, and about 4000 to the islands, or altogether about 29,500 square miles, or 18,880,000 imperial acres.

BOUNDARIES.—*Northern and Western,* the Atlantic Ocean; *Eastern,* the German Ocean, or North Sea; *Southern,* England, and the Irish Sea.

GENERAL ASPECT.—The mainland of Scotland may be described under three great natural divisions, which, for the sake of distinction, we shall designate the *Southern,* the *Middle,* and the *Northern.* The first or Southern division extends from the Irish Sea and the borders of England to the Firth of Forth, the Campsie Hills, and the Firth of Clyde; the second or Middle division, extends from the last-mentioned boundary northward to the Moray Firth, and the Glen-more-nan-Albin, or Great Valley of Scotland, which stretches in a south-western direction through the middle of Inverness-shire to the Atlantic; and the third, or Northern division, lies to the west and north-west of the Glenmore and the Moray Firth.

The central portion of the southern division is occupied by the numerous ramifications of a long range of mountains, sometimes called the South Highlands, which extend westward from the Cheviot Hills on the borders of England, and form the watershed between the rivers which run to the Irish Sea, and those which fall into the Firth of Clyde, the Clyde itself, and the Tweed. To the north of these mountains the valleys of Tweeddale and Clydesdale stretch from sea to sea, the watershed between them being formed by a spur of the South Highlands in the very centre of the region. The northern border of these great valleys is formed by the Lammermuir and Moorfoot Hills, which extend westward from St Abb's Head, and to the westward of these by a ridge of high ground, scarcely rising into hills, which lies

* Longitude of St. Kilda.

along the borders of Linlithgowshire and Lanarkshire. From the Campsie Hills eastward, the plain of Stirling and the low country of Lothian stretch eastward along the southern shore of the Firth of Forth. A similar belt of low-country to the west of the central chain, and comprising the lowlands of Ayrshire, extends along the east side of the Firth of Clyde. Along the south coast, the chains of hills which extend laterally from the Highland range form a series of great valleys, named from their respective rivers, Eskdale, Annandale, Nithsdale, and Glenkens; and the comparatively level county of Wigton. The mountains in the counties of Roxburgh, Peebles, Selkirk, and Dumfries, have generally sloping acclivities, with flattish rounded summits; and are mostly covered with grass and other herbage, which afford excellent pasture for large flocks of sheep. The mountains of Galloway and Ayr are more rugged and heathy, but they have few of the features which form the bold precipitous character of the mountains in the Northern Highlands.

The central and western portions of the Middle division are occupied by the numerous branches of the Grampian and West Highland mountains, which are in general remarkable for their sterility and desolate aspect, and are in some parts extremely precipitous, exhibiting vast perpendicular masses of rock. Their summits are frequently rounded, sometimes nearly flat, and covered with blocks of stone, mixed with grit and sand, except where the granite rocks present the singular appearance of large tabular pinnacles. The lower parts of them are covered with heath, growing out of the peat-earth, mixed with the rock and gravel, comparatively few of them being clothed with green herbage. The mountains are frequently separated by deep narrow ravines or glens, through which lie the natural passes of the country. These admit of being easily defended, and until lately that roads have been carried through some of them, they were almost impassable by any but natives.

Along the south-eastern side of the Grampians, a wide valley extends from Dumbartonshire to Kincardineshire, bearing in its eastern part the name of Strathmore (i. e. *great valley)* This valley is interrupted only in two places; by a ridge which joins the Grampians and the Ochil Hills, between Muthil and Dumblane, and by another ridge which separates Loch Lomond from the valley of the Forth; with the exception of those interruptions, no part of the valley is more than 200 feet above the level of the sea. The southern border of Strathmore is formed by the Sidlaw, Ochil, and Campsie Hills; to the south-east of which lie the Carse or Plain of Stirling, the peninsula of Fife, the Carse of Gowrie, and the low maritime districts of Forfarshire. To the north of the great chain lies the fertile plain of Moray, which extends along the southern shore of the Moray Firth, and comprehends the valleys of the Spey, Findhorn, Nairn, and Spean. The Glen-more-nan-albin is a long valley, which extends from Inverness to Fort-William, and contains three long narrow lakes, named Ness, Oich, and Lochy, which are connected with each other, and with the eastern and western seas by the Caledonian Canal. The country to the west and north of the glen is a wild, barren, and desolate region of mountains and valleys, lakes, lochs, and rivulets; but containing also some narrow strips of cultivable land on the eastern sea-coast, and along the margins of its numerous lakes and rivers. Caithness, however, is generally a flat country, but consists to a great extent of moorland, and is only partially capable of cultivation.

The Western Islands partake very much of the character of the neighbouring mainland. The Orkney group is in general hilly and rocky, with considerable tracts of barren sand. In the interior of the Shetland Islands the soil in general consists of moor and bog, with high mountains, but near the coast there are some level pleasant tracts of considerable extent, which produce tolerable crops, and afford good pasture.

Scotland is, generally speaking, so rugged and sterile that it is doubtful if so much as one third of its surface is arable. With the exception, indeed, of a few tracts of rich alluvial soil, it contains no extensive vales; the surface of the country, even where most level, being considerably diversified with hill and dale. Even the finest parts of the low country, though rich and fertile, seldom equal the luxuriance of the English landscape. Plantations are not spread generally over the country, but are mostly confined to the neighbourhood of the seats of the landed proprietors, while many extensive districts are entirely destitute of wood. Notwithstanding these disadvantages, the Scottish landscape is singularly picturesque and impressive; and instead of the tameness and monotony which characterise many parts of England, the eye of the traveller is gratified by an endless variety of scene.

Gulfs, Bays, and Straits. — These, from the conformation of this portion of Britain, are very numerous; but we confine our notice to the most important.

On the East coast:—The *Firth* of Forth* is a large estuary, between Fife and Lothian, extending above 50 miles inland. At its mouth, between the Fifeness and the Scaur in East Lothian, it is above 15 miles wide; between Ely Ness and North Berwick it contracts to 8 miles; but expands again to an average width of 11. Opposite Edinburgh its width contracts to 5 or 6 miles, and at Queensferry to 2; but, farther up, for several miles, it widens to 4 or 5, gradually contracting again, till at Alloa, where it may be said to terminate, it is only 1,500 feet across. There is good anchorage in many parts of this magnificent estuary, particularly in Leith-Roads, under the shelter of Inchkeith, in Burntisland-Roads, and St. Margaret's Hope, above the Queensferry; but there is not in the whole extent of it a single good harbour. The shores are low, in part rocky, in part a pleasant beach, but everywhere of the greatest beauty; and the view of the firth, in fine weather, from Arthur Seat, or the Calton Hill at Edinburgh, is reckoned not much inferior in beauty and interest to the bays of Naples, Bombay, and Rio Janeiro. Along both sides of this firth are a number of indents of the land, some of which are locally denominated bays. The principal of these are *Aberlady Bay* and *Musselburgh Bay*, on the East-Lothian and Mid-Lothian coasts, and *Largo Bay*, on the coast of Fifeshire. *Belhaven Bay*, on the east coast of Haddingtonshire, is situate immediately to the west of Dunbar. The *Firth of Tay*, between Fife and Forfar, is above 20 miles in length by 2 in breadth. Its mouth is obstructed by sandbanks; but from Button-ness to Dundee it is navigable for ships of 500 tons; and, at high water, vessels of 100 tons can reach Perth, 20 miles higher. *St. Andrew's Bay* is a considerable expanse of water to the south of the entrance to the Firth of Tay. On the Forfarshire coast the point called the Red-Head forms the southern extremity of the little bay of *Lunan*. The *Moray* or *Murray Firth*, is a wide gulf between Moray on the south, and the coasts of Ross and Cromarty on the north-west. It terminates westward in the *Beauly Firth*, an estuary which extends from Fort George to some miles above Inverness, forming the entrance of the Caledonian Canal. Ranging eastward between the mouth of the Moray Firth and Kinnaird-Head, are the small bays of *Brough Head Bay*, in Elginshire; *Spey Bay*, in Elginshire and Banffshire, and *Aberdour Bay*, in Aberdeenshire. *Cromarty Firth*, in Ross-shire, is about a mile wide at its entrance, and extends southwest to Dingwall about 17 miles, forming the finest harbour on the east coast of Great Britain, and indeed surpassed by few in any part of the world. At its mouth it has from 22 to 30 fathoms water, the depth within varying from 15 fathoms to 7. Owing, however, to the barrenness of the country, and the want of trade and population, this fine harbour is comparatively useless. *Dornoch Firth*, between Ross and Sutherland. *Wick Bay*, *Ries* or *Sinclair's Bay*, and *Friswick Bay*, on the east coast of Caithness, between Noss-Head and Duncansby Head.

On the North coast:—*Thurso Bay*, in Caithness; *Pentland Firth*, a strait between Caithness and Orkney, of very difficult and dangerous navigation, on account of the strong tides and currents that rush through it; the *Kyle* of *Tongue*, and *Loch Eriboll*, on the coast of Sutherland. Between the groups of the Orkney Isles and Shetland Isles, Fair Isle separates the intervening channel into *Sumburgh Passage* on the north, and *Earl Bothwell's Passage* on the south.

On the West coast:—The *Passage of Pomona* separates the islands of Pomona and Hoy from a shoal to the westward, having the Sule Skerry and the Stack (rock) at its northern, and the Nun Rock at its southern extremity. The *Nun Passage* is situated to the south of the Nun Rock, and a little farther to the south-west, opposite to the Butt of Lewis, the *Passage of Lewis and Bara* leads to the *Great Minsh* or *Firth of Lewis*, and the *Little Minsh*, a sea or wide strait, between the Long Island and the coasts of Sky, Ross, and Sutherland. *Kyle* and *Sound of Sleat*, between Sky and the mainland of Inverness. The *Sound of Mull*, between Mull and Morvern. *Sound of Jura*, between Jura and Knapdale. *Sound of Islay*, between Islay and Jura. *Kilbrannon Sound*, between Cantire and Arran. *Kyles of Bute*, between Bute and Cowall. *Laxford*, *Assynt*, and *Enard lochs*, in Sutherland; *Broom*, *Greinord*, *Ewe*, *Gair* or *Gare*, *Torridon*, *Carron*, *Alsh*, and *Duich lochs* in Ross; *Snizort*, *Dunvegan*, *Vattan*, *Bracadale*, *Eynort*, *Brittle*, *Scavig*, *Eishart*, *Indaal lochs*, in Sky; *Hourn*, *Nevish*, *Nuagh*, *Moydart lochs* in Inverness-shire; *Tua*, *Stornoway*, *Sheil*, *Seaforth*, *West Tarbet*, *Maddy*, *Eport*, *Eynort*, *Boisdale lochs*, in the Long Island; *Sunart*, *Linnhe*, *Eil*, *Leven*, *Crenan*, *Etive*, *Swin*, *Killisport*, *West Tarbet*, *Campbeltoun*, *Fine*, *Gilp*, *Ridden*, *Strevin*, *Goil*, *Long lochs*, in Argyleshire; *Gare loch*, in Dunbartonshire; *Indaal* and *Gruinart lochs*, in Islay; *Tarbert loch*, in Jura; *Spelve*, *Buy*, *Scriden*, *Na-kael*, *Mingary lochs*, in Mull; and *Loch Ryan*, in Wigtonshire. Of these lochs all that are of much importance are:—Linnhe, Eil, Fine, and Ryan. The two first form the west entrance to the Caledonian Canal, extending together about 34 miles inland, with deep water throughout. Loch Fine extends with a circular sweep about 40 miles into the heart of Argyleshire; with a width contracting gradually from 7 miles at its mouth, and very deep water throughout; so much so that at Inverary, within 7 miles of its inland extremity, there are upwards of 60 fathoms. Ryan is also a fine sheet of water, with good anchorage and sufficient depth to float the largest ships. The *Firth of Clyde* opens northward between the islands of Arran and Bute on the west, and the coast of Ayrshire on the east, with a width of 15 miles, gradually contracting to the width of the river, which it meets not many miles below Glasgow. Two beautiful expanses of water, called Loch Long (long lake) of which Loch-Goil is a branch, and the Gare-Loch (short lake), are arms of this firth, branching from its north side; the water in both is very deep; and in the main channel of the firth itself, within a short distance of Greenock, there are 23 fathoms at ebb; but higher up from opposite Port-Glasgow to Dumbarton, the bed of the firth is almost filled up by a sandbank extending from the north shore, and leaving the only navigable channel upon the south side. *Lamlash Bay* on the east side of Arran is completely land-locked, and protected from easterly gales by the island of Lamlash.

On the South coast:—*Luce Bay* and *Wigton Bay*, in Wigtonshire; *Kirkcudbright Bay*, in Galloway; and the *Solway Firth.*

CAPES.—*St. Abb's Head*, Berwickshire, a high and bold promontory; *Barn-ness*, *Whitbury-ness, and Gullan-ness*, Haddingtonshire; *Fifeness*; **Button-ness*,† at the mouth of the Tay; *Red Head*, Forfarshire; *Jod Head*, *Garron Point*, and *Finnan-ness*, Kincardineshire; **Girdleness*, at the mouth of the Dee; **Buchan-ness*, *Rattray Point*, *Cairnbulg Head*, **Kinnaird Head*, Aberdeenshire; *Troup Head*, *Knock Head*, Banffshire; *Burgh Head*, Morayshire; **Tarbet-ness*, Cromarty; *Ord* of *Caithness*, *Clyth-ness*, *Noss Head*, *Duncansbay Head*, **Dunnet Head*, and *Holburn Head*, Caithness-shire; *Stark Point* (I. of Sanda), Orkney; **Sumburg Head* (I. of Mainland), Shetland; *Strathy Head*, *Whiten Head*, *Far-out Head*, **Cape Wrath* and *Assynt Point* or *Stour Head*, Sutherlandshire; *More Head*, in the western coast of Cromartyshire; *Udrigal Head* and *Rhu-Rea-Head*, Ross-shire; *Bult of Lewis* and

* This word is very generally mis-spelled *frith*. It is nevertheless universally pronounced *firth*, and is a derivative, or cognate, of the Scandinavian word *fiord*, an inlet or arm of the sea. Sir Walter Scott, and Mr. Tytler (in his History of Scotland), invariably spell it firth, not frith.

† The prefixed *asterisk* denotes the headland to be the site of a lighthouse.

**Barra Head* (Bernera Isle, the southern extremity of the chain of Long Island), *Aird*, or *Trotternish*, *Unish Point*, *Copnahow Head*, *Sleat Point* (I. of Sky), Inverness-shire; *Point of Ardnamurchan*, and **Mull of Cantire*, *Lamont Point*, **Toward Point*, *Rinns of Islay*, and *Mull of Kinhoe* (I. of Islay), Argyleshire; *Turnberry Head*, *Benman Head*, Ayrshire; **Clough Point*, Renfrewshire; *Kirkcolm Point*, **Corsill* or *Corsewall Point*, **Mull of Galloway*, *Burrow Head*, Wigtonshire; *Ross Head*, *Rayberry Head*, and **Southerness* or *Salterness Point*, Kirkcudbrightshire.

ISLANDS, SANDBANKS, and SHOALS. — Scotland has an immense number of islands attached to it, some of which are of great extent, though few are of much value. They may be arranged in four classes; —1. Those on the east coast; 2. The Orkney and Shetland Islands; 3. The Hebrides, Hebudæ, or Western Islands of Scotland; 4. The islands in the Firth of Clyde.

1. *On the East coast: — Inchkeith* (site of a lighthouse), *Inchcolm*, *Inchgarvey*, *Cramond*, *Mickry*, *Craigleith*, *Lamb*, *Fidra*, *Eyebroughy* or *Ibris*, *Bass Rock*, and *Isle of May* (site of a lighthouse), all small islands in the Firth of Forth. The Bass is a basaltic rock, rising almost perpendicularly from the sea to the height of 400 feet, in deep water; and the only place on the east coast that is resorted to by the Gannet or Solan goose. *Car-Rock* (station of a beacon), 1½ miles N.E. of Fife-ness. *Bell-Rock*, 12 miles due east of Button-ness, is a dangerous ledge, about 850 yards in length by 110 in breadth. A lighthouse, upon the model of that of Eddystone, has been built upon it, the lantern of which is 90 feet above high-water of spring-tides. *Marr's Bank*, a sandbank, 30 miles E. of the Bell-Rock. *Murray Sandbank*, 10 miles E. of Montrose; and the *Outer Montrose Pits*, a shoal, 80 miles farther east. The *Long Forties*, a shoal running nearly parallel to the coast from the outer edge of the Murray Bank to a point about 70 miles of Kinnaird Head, and inclosing the Buchan Deep on the east. *Dutch Bank*, the inner margin of which is about 11 miles distant from the northern portion of the Long Forties. *Pentland Skerries* (site of a lighthouse), at the eastern entrance of the Pentland Firth. *Stroma Isle*, 4 miles N.W. of Duncansby Head.

2. The *Orkney and Shetland Islands* form two distinct groups to the north-east of Caithness, from which the Orkneys are separated by the Pentland Firth, a strait of 6 miles wide. The principal of the Orkneys are,—*Pomona* or *Mainland*, a large island; *Hoy*, *South Ronaldsha*, *North Ronaldsha*, *Sanda*, *Stronsa*, *Eda- Westra*, *Papa- Westra*, *Rousa*, *Egilsha*, *Jara*, *Shapinsha*, *Copinsha*, *Barra*, *Græmsay*, *Scalpa*, *Swona*. The total number is estimated at about 67, of which about 40 are uninhabited. They are estimated to comprise an area of 281,600 acres. The *Shetland, or Zetland* * (properly *Yethand*, or *Hialtland*) *Isles*, are separated from the Orkneys by a channel 48 miles across, in the middle of which is *Fair Isle*. Including islets and holms, they are supposed to exceed 100 in number; of which between 30 and 40 are inhabited. *Mainland* is 60 miles long, but of the most various and irregular breadth. The other principal islands are,— *Yell*, *Unst*, *Whalsay*, *Bressa*, *Noss*, *Mousa*, *Foula*, *Fetlar*. Their total superficial extent is estimated at 563,200 acres. The aspect of both groups is much the same; but the Shetland isles are the more rugged, wet, and barren of the two. They are generally fenced, particularly on the western side, with high, dark, precipitous cliffs, against which the sea dashes with great fury. Their general appearance is that of dreary heathy wastes, interspersed with rocks, varied sometimes with swamps and lakes, and in a few places with beds of moveable sand. In some parts, however, particularly in Orkney, the land is abundantly fertile, producing good crops of corn and luxuriant herbage. The climate is very moist, but equable.

3. The *Hebrides*,† or *Western Islands of Scotland*, may be divided, as indeed they naturally are, into two divisions, — the *Outer* and the *Inner*. The latter are all clustered close upon the mainland, and the names of the principal ones are, *Sky*, *Raasa*, *Rona*, *Canna*, *Rum*, *Eig*, in Inverness-shire; *Mull*, *Staffa*, *Iona* or *I-Colm-Kill*, *Coll*, *Tiree*, *Skerryvore* (a dangerous group of rocks 13 miles south of Tiree L.) upon which the Commissioners of the Northern Lights are erecting a lighthouse, *Muck*, *Lismore* (site of a lighthouse), *Scarba*, *Colonsay*, *Oronsay*, *Ila*, *Jura*, *Gigha*, in Argyleshire. The outer Hebrides are separated from the inner by a wide channel, the Minsh, and form one continuous group of about 140 miles in length, so close together that they are commonly considered as one, and named the *Long Island*. The principal of them are, *Lewis* and *Harris*, joined together by a sandy isthmus; *Island Glass* (site of a lighthouse), near the S.E. point of Lewis; *Bernera; North Uist; South Uist; Benbecula; Barra; Oatersay*. Some of the islands, particularly *Skye*, *Mull*, *Jura*, and *Harris*, contain extensive tracts of high, rugged, mountain land; in many places, particularly in Long Island, the country consists of extensive dreary tracts of moss and muir, but in most of the islands there is considerable extent of hill pasture.

4. *Islands in the Firth of Clyde: — Bute*, *Arran*, *Pladda* (site of a lighthouse), *Great Cumbrae*, *Little Cumbrae* (the site of a lighthouse), *Ailsa*. Bute is separated from the district of Cowal in Argyleshire by a narrow strait called the Kyles of Bute, and measures 18 miles in length by 5 in breadth. It is bleak and mountainous on the north, but towards the south it consists of green fertile eminences or low hills, either affording good pasture, or capable of producing excellent crops of barley, oats, &c. It is distinguished altogether for picturesque beauty and salubrity of climate. Arran is a larger island, to the south of Bute, in shape almost an oval, extending from south to north 24 miles, and in breadth about 14. It is a mass of heathy mountains, some of which exceed 3000 feet in height, but are very symmetrical, surrounded by a narrow belt of lowland. The Cumbraes are two small islands in the gorge of the firth, between Bute and the coast of Ayrshire. Their surface is hilly and verdant, but bare. *Ailsa Craig*, 15 miles from the coast of Ayrshire, is an insulated hill, about 2 miles in circumference, and rising to the height of near 1000 feet above the level of the sea. For about 400 feet up it is cliffy and precipitous, but the conical top is covered with a luxuriant crop of heath, grass, and other plants, which feed an enormous number of goats and rabbits. The cliffs all round are constantly covered with vast numbers of solan geese, puffins, and gannets. It belongs to the Marquis of Ailsa, who draws from it a rent of £30 a-year.

RIVERS. — The most important rivers in Scotland are the Forth, Clyde, Tay, Tweed, and Spey. To the following brief notices of these rivers, we add the names and localities of the most remarkable of the minor streams: —

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* Z, in Scottish names, represents the Saxon form of the modern Y, and has properly the same pronunciation. For example, Zetland, Cockenzie, Drummelzier, Enzie, are properly pronounced Yetland, Cockenyie, Drummelyier, and Enyie. There is no exception to this rule either in names of persons or of places; the surname *Yule*, for instance, is, in the west of Scotland, spelled Znill.

† This name is said to have originated with a blundering copyist, who mistook the *u* in Hebudæ for *ri*. Both of these names are alike *foreign* to the natives of the Western Islands.

The *Forth* rises on the east side of Ben Lomond, and runs easterly with many windings till it unite with the firth at Alloa. For the greater part of its course it flows through a low, flat, rich country, in so tortuous a manner that its actual channel is three times the length of a straight line drawn from its source to its mouth. It is navigable for vessels of 70 tons up to Stirling; but is little navigated, on account of its windings, except by steam-boats. Ships of 300 tons reach Alloa, which may be considered at the mouth of the river. The *Teith* is the drain of lochs Katherin, Vennachar, Voil, Lubnaig, &c., and joins the Forth above Stirling with a body of water larger than its own. Its other affluents are — the *Allan* from Perthshire, *Black Devon* and *South Devon* from Clackmannan.

The *Clyde* rises in the centre of the south highlands, not far from the sources of the Tweed and the Annan, and flows in a north-westerly direction to the firth of the same name below Glasgow. Near Lanark it is precipitated over a succession of falls or cataracts, falling 186 feet within a distance of six miles. Its principal affluents are —*Avon, Douglas, Mouse, Medwin, Nethan, Calder,* and *Kelvin.* The Clyde has been rendered navigable up to Glasgow; and, under the provisions of an act of parliament, 6 Geo. IV., it was to be made 13 feet deep at neap tides. The trade upon it is very extensive, and it is a crowded thoroughfare for boats and steam-ships.

The *Tay*, the largest river of Scotland, rises on the west borders of Perthshire, forms Loch Tay, and flows south-easterly into the firth below Perth. Its affluents are, *Dochart Lochy, Lyon, Tummel, Bran, Isla* and *Airdle; Almond* and *Earn.*

The *Tweed* rises on the east side of Erickstane hill, six miles from Moffat, flows northward to Peebles, and then turning towards the east, falls into the German Ocean at Berwick, forming, for the last 16 miles of its course, the boundary between England and Scotland. Its affluents are: —The *Lyne, Manor, Megget, Eddlestone, Quairs,* in Peebles-shire; the *Gala, Ettrick,* and *Yarrow,* in Selkirkshire; the *Teviot,* with its tributaries, the *Borthwick, Allan, Slitterick, Rule, Jed, Kale, Ale,* from Roxburghshire; the *Leader, Eden, Leet, Whiteadder,* and *Blackadder,* from Berwickshire; the *Till* and *Bowmont,* from Northumberland.

The *Spey* issues from loch Spey, which is elevated 1,280 feet above the level of the sea, within seven miles of the head of loch Lochy, and flows in a north-easterly direction into the Moray Firth. Besides being one of the largest, it is also considered as the most rapid of the Scottish rivers.

The *Eye,* in Berwickshire; the *Tyne, North Esk, South Esk, Leith, Almond, Avon,* in Lothian, the *Carron, Endrick,* and *Blane, Bannockburn,* in Stirlingshire; the *Torry, Dour, Leven, Eden,* in Fifeshire; the *Dighty, Elliot, Brothock, Lunan, South Esk,* in Forfarshire; the *North Esk,* between Forfarshire and Kincardineshire; the *Dee, Don,* and *Ury, Ythan, Ugie,* in Aberdeenshire; the *Doveron* in Banffshire; the *Lossie,* and *Findhorn,* in Morayshire; the *Nairn,* in Nairnshire; the *Ness* and *Beauly,* in Inverness-shire; the *Connan, Garve, Carron, Oikell,* in Ross-shire; the *Shin, Fleet, Brora, Helmsdale, Naver,* in Sutherlandshire; the *Langwall, Berrydale, Wick, Thurso, Forss,* in Caithness-shire; the *Leven,* in Dumbartonshire; the *Black Cart, White Cart, Gryffe,* in Renfrewshire; the *Irvine, Ayr, Doon, Girvan, Stincher, Lugar,* in Ayrshire; the *Luce,* in Wigtonshire; the *Ken* and *Dee,* in Kirkcudbrightshire; the *Nith, Cluden, Annan, Dryfe, Milk, Esk, Kirtle, Sark,* in Dumfries-shire; the *Lidd** in Roxburghshire, an affluent of the Esk.

LAKES. —The lakes of Scotland are very numerous; many of them being of considerable size, and celebrated for their picturesque beauty. They are all mountain lakes. The principal of these, and indeed the largest of all the British lakes, is Loch Lomond, between Dumbartonshire and Stirlingshire. It is 24 miles long from north to south, and at its broadest part 7½ miles across; but in the northern part it is contracted to less than a mile. Loch Lomond is supposed to cover a space of 28,000 acres. The average depth is about 20 fathoms, but in some places it has a depth of 80, and even 120. It is studded with a number of beautiful, finely-wooded islands, some of which are of considerable size; and on its north-eastern bank, Benlomond rises precipitously to the height of 3095 feet. This lake seems to have been formerly called Loch Leven (smooth lake), and the river which carries its surplus waters to the Clyde still bears that name.

In Perthshire: — Lochs *Ard,* &c.—drained by the Forth; *Katterin, Achray, Vennacher, Voil,* and *Lubnaig,* by the Teith; *Earn; Tay; Lydoch, Eroch, Ericht, Rannoch, Tummel* and *Garry,* drained by the Tummel and its affluents; *Clunv; Quiech.* In Forfarshire, *Lochlee,* and *Loch of Forfar.* In Inverness: — *Ness,* 22 miles long, *Oich* and *Garry,* drained by the Ness; *Laggan, Ouchan, Treag,* drained by the Spean; *Lochy,* and *Arkeig,* drained by the Lochy; *Ruthven, Duntalliak, Ashley.* In Ross, *Maree, Fuir, Shallag, Fannich, Rusk, Luichart, Monar, Glas, Moir, Slin.* In Sutherland, *Shin, Naver, Furan, Baden, Loyal, More.* In Argyle, *Awe,* and *Avich; Shiell; Eck.* In Renfrew, *Winnoch,* (or *Castle Semple Loch*), *Queenside, Libo, Shaw's water,* &c. In Ayr, *Doon.* In Galloway, *Ken.* In Dumfries, *Loch Skene,* at the head of Annandale, 1,300 feet above the level of the sea, and emitting its waters by a lofty cataract called the *Grey Mare's Tail.* In Selkirkshire, *St. Mary's Loch,*

* Commonly miscalled *Liddel,* a compound word meaning the *dale, dell,* or *valley* of the *Lidd,* which is the old British name of the river. The valley itself is properly called Liddis-dale.

and *the Loch of the Lows*, both drained by the Yarrow. In Fife, *Loch Orr* (now drained), *Loch Fitty, Loch Gelly, Kilconquhar Loch, Loch of Lindores*. In Kinross, *Loch Leven*, and *Loch Glow*, both drained by the Leven.

The following are the estimated *superficial dimensions* in square miles of 26 of the principal Scottish lakes: — Lomond, 45; Awe, 30; Ness, 30; Shin, 25; Maree, 24; Tay, 20; Arkeig, 18; Shiel, 16; Lochy, 15; Laggan, 12; Morrer, 12; Fannich, 10; Erieht, 10; Earn, 9; Naver, 9; Stennis, 8; Rannoch, 8; Leven, 7; Fuir, 6; Lydoch, 6; Ken, 6; Loyal, 6; Glas, 5; Katterin, 5; Doon, 4½; Luichart, 3.

Mountains, Valleys, and Plains. — These have been already described in the view of the British Mountain Systems (*antè*, p. 158), and under the head of "General Aspect" of Scotland (*antè*, p. 260.)

Climate. — The climate of Scotland, as might be expected from its insular situation and high latitude, is cold, cloudy, and wet, when compared with the greater part of England. Yet even in the south of England, frost is sometimes more intense, and the falls of snow more copious, than in Scotland; and on the west coast of the former, the quantity of rain is also greater. Scotland, however, is more subject to cold north winds, to frequent falls of snow, and to late and ungenial springs and summers. But the proximity of even the more inland places to the tempering influence of the sea, prevents the snow from lying, and the temperature from remaining long at the freezing point, except in the more mountainous districts, where the labours of the farmer are sometimes interrupted for two or even three months. The mean annual temperature is very high, in reference to the latitude. The lowest yearly average is 41° 11′; the highest 50° 32′; and the average for the whole country may be stated at between 45° and 47°. The range of the barometer is often very great, and the rises and depressions very sudden. The average range for the whole kingdom is 2.82 inches, or from 30.92 to 28.10; but in the Orkneys it is somewhat more, being there about three inches. The quantity of rain which falls on the east coast varies from 22 to 26 inches; while on the west coast it is nearly twice as much, ranging from 35 to 46 inches, according to the situation. The average number of days in which either rain or snow falls on the west coast is about 200, on the east coast about 145. In consequence of this excess in the total quantity of rain, the climate of the western side of the kingdom is said to be wet while compared with that of the eastern side, and is not so well adapted for the ripening of grain. The wind is much more variable than in England, and more boisterous, especially about the time of the equinoxes. Westerly winds are the most prevalent, particularly during autumn and the early part of winter; but in March, April, and May, and sometimes during part of June, north-easterly winds prevail, and are very severe. The highest winds are generally from the west. In winter and spring the weather is exceedingly variable, particularly in the northern and western parts of the kingdom. The occurrence of snow, frost, sleet, and rain, varied by calms and high winds in the same day, is by no means uncommon. In the most northerly counties, snow generally begins to fall about the middle of November, and recurs at intervals till March or April. Thick fogs, with small drizzly rains, are frequent in spring and autumn, when the wind blows from the east, and are not unusual during the rest of the year, especially in the western and northern isles. In Orkney and Shetland, the heaviest and longest-continued falls of rain are from the east and south-east. Corn, and most of the fruits and vegetable which are common to both the divisions of Great Britain, attain maturity nearly a month sooner in England than in Scotland; and some plants, such as hops, and a few others, cannot be profitably cultivated at all in the northern portion of the island.

Geology and Mineral Productions. — Referring to the account already given of the general classification of the British rocks (see *antè*, p. 183), we proceed to notice in detail a few of the most prominent geognostic features of Scotland.

In a general point of view, Scotland may be separated, geologically as well as geographically, into three portions. By passing a line on the map nearly straight, from Stonehaven, through Dunkeld to the middle of the Isle of Bute, and thence with a slight curve to the Mull of Cantyre, we shall have traced the southern boundary of the Primary Non-fossiliferous system of rocks. Another line, but more irregular than the former, drawn from St. Abb's Head, passing near Peebles, Abington, Sanquhar, New Cumnock, to about Girvan, will have a general parallelism with the former line, and will have the Older Greywacké, now named the Cumbrian System, lying to the south, and extending to the borders; while the land included *between* the two lines comprehends the Old Red Sandstone, and great central Coal Basin of Scotland.

I. Stratified Rocks.—We shall first notice the stratified systems of those three divisions of the country, beginning with the oldest.

That extensive tract of Scotland which constitutes the northern division, is composed chiefly of *Primary Stratified rocks*, namely, gneiss, mica slate, chlorite slate, and clay slate, with subordinate masses of hornblende slate, talc slate, and primitive limestone. These, often with granitic centres, rise into magnificent mountains, of which the Grampians form a part. In many of these deposits, particularly in the mica slate, garnets of a brown colour are very abundant. The mountains of the Trossachs, so effectively described by Sir Walter Scott, are chiefly composed of mica slate. In these primary deposits no organic remains have ever been discovered.

But these are not the only stratified formations which constitute this extensive district. The old red sandstone fringes the extremities of the land, commencing about Fochabers, on the east side of the Murray Firth; extending on both sides of Loch Ness within a short distance of Fort Augustus, and then proceeding northwards with a variable breadth through Fortrose, Tain, Dornoch; expanding the whole breadth of Caithness, and constituting the principal formation of the Orkney Isles. On the western side of the mainland, the old red sandstone is deposited in numerous patches on the gneiss formation, as at Loch Broom, Gairloch, and Applecross.

The Newer Secondary rocks have been but very sparingly observed in Scotland; yet it is rather a curious fact, that the few patches which have been discovered, are superimposed generally on the old red sandstone, and have not been seen reposing in their uninterrupted order in the secondary series. Thus, the lias shales, highly micaceous, and some of the upper beds of the *Oolitic system*, occur at the mouth of the Cromarty Firth, from Dunrobin Castle to the Ord of Caithness; Applecross and other points on the mainland; and in the Western Isles, on the borders of Mull, the south and east of Skye, and, near the Cock of Arran, on a small coal deposit. The equivalent of the fresh water deposits of the Wealds of Sussex, geologically situate above the oolitic group, and below the chalk, is seen near Elgin, in Murray, and Loch Staffers, in Skye. In the central and southern divisions of Scotland, those newer groups of rocks have not been detected.

In tracing the geological features of the country in the ascending order of the groups, and confining ourselves to the geographical divisions pointed out, we next come to the *Transition* or *Greywacke system*, now divided into two principal sections, — the *Lower* or *Cumbrian*, and the *Upper* or *Silurian*. So far as is hitherto ascertained, the silurian division is unknown in Scotland, but the cumbrian rocks,—nearly destitute of organic remains, cover the principal part of the great area of the south of Scotland. These greywacké strata stand at high angles of from 60° to 90° from the horizon, and consist chiefly of coarse slaty strata, seldom divisible into thin roofing slates, and often alternating with arenaceous and coarse conglomerates. Amongst these strata limestone is seldom found, and when it is, the quality is inferior. In the division of the island of which we now treat, coal and its accompaniments are known in very few places. Coal is, however, worked at Canoby and on the borders at the Carter Fell. The only other rock formation found in connection with the old transition group here (with the exception of igneous rocks), is a red sandstone, ascertained, in some situations to be the old red, but in some other places, considered to be the new red sandstone, particularly in Dumfries-shire, where the surfaces of the slabs have curious impressions, supposed to be those of the feet of a species of tortoise.

The Old Red Sandstone and the Carboniferous System. — In the central division is placed the great coal basin of Scotland; but adhering to our rule of marking the successive formations in the ascending order, we shall first treat of the *Old Red Sandstone*, the most ancient rock in this subdivision of the country. This rock abuts against the line of the primary rocks, and stretches across the whole country, from the German Ocean to the Atlantic, pursuing a south-westerly and north-easterly direction. From the northern line of division it stretches south to the Firth of Tay, bearing through Dunning near Stirling, Dumbarton, and thence through the Western Isles, Bute and Arran, and is wrapped nearly round the extremity of the main land at the Mull of Cantyre. The old red sandstone thus forms a long, uninterrupted, and extensive fertile valley. In the north-western part, it rises into hills, in the sides of one of which, Uam Vor, are deep and hideous fissures, the effect of some convulsion. It is more irregularly distributed on the southern boundary of the middle division, commencing on the east about Dunbar, and stretching westerly on the line of the transition range of Moorfoot and Lammermoor hills beyond Middleton, where it is interrupted by a range of trap, but is again found in the country round Lanark. This formation appears to be of vast thickness, especially in the northern part of the division, and may, it is supposed from recent observation, be divided into three portions, the lower, the middle, and the upper beds. In what is considered the lower strata, the remains of fishes have been found in a high state of preservation, and also large scales and other remnants of a sauroid character, such as those of the holoptychus. The well known Arbroath pavement belongs to the old red sandstone series.

The most important group in the central district is the *Coal Formation*, consisting of limestone, ironstone, freestone, coal, and clays. Its extent from east to west is bounded only by the extremities of the land. To the north it is cut off from the old red sandstone by a range of trap hills, crossing the country from east to west. On the south it is bounded by the greywacke and old red sandstone. Its breadth averages 40 miles, and is in length about 70. The *mountain limestone* forms generally the basis of this group, though it is frequently found interstratified with other members of the series, and abounds with countless numbers of organic remains. Below the mountain limestone, however, but belonging to the same group, a bed of limestone is worked at Burdiehouse, near Edinburgh, in which the organic remains differ essentially from those of that just named. These remains consist of many of the plants which distinguish the coal formation; but it also includes the teeth, scales, and other bones of fish, which partake of the reptile character, some of which must have been of gigantic dimensions. Small fishes (the paleoniscus, &c.) are also found in a fine state of preservation. The same limestone has been found in other parts of the country, and is of superior quality to the common limestone for mortar, plaster, and the smelting of iron. The *clay ironstone* is found in beds and nodules, the workable kinds containing from 27 to 45 per cent. of iron. The kind termed black band is in high request. From this ore a vast quantity of pig iron is smelted. The *coal* is found in beds, varying from a few inches to 40 feet in thickness, and one bed in Ayrshire is about 100 feet thick, interrupted only by thin seams of shale from 1 to 3 inches, and is extracted in great quantity, and used as fuel for domestic purposes, the burning of lime, smelting of iron, working of steam-engines on sea and land. One variety, cannel coal, is of superior quality for the preparation of gas. From the fire clay are manufactured fire-brick and gas retorts; and the sandstone furnishes an inexhaustible store of substantial and beautiful material for building. These several deposits contain in abundance the impressions of the vegetables which distinguish the carboniferous period; and what is remarkable, the remains of animals, the same as noted as occurring in the Burdiehouse limestone, are found in the shales and even in the coal itself. In this district, no strata newer than the carboniferous system is known to exist; all is covered over with accumulations of clays, gravels, sands, and soil.

II. UNSTRATIFIED ROCKS. — Having thus noticed the direction and geographical position of the several stratified formations of Scotland, we now come to treat briefly of the *Unstratified System*; and in order to bring this department more clearly to the apprehension of the general reader, we shall again repeat our former remark, that the unstratified rocks are of igneous origin — they were, in fact, melted volcanic matter, which had burst through the stratified deposits, which were thus elevated into mountain ranges; the *strata* being at the same time raised on edge to various angles with the horizon. This being the case, we consequently find that the *unstratified* follow the same course with the stratified mountains, since the former were the elevating cause of the latter. NOW GRANITE, an igneous rock, is more generally found connected with the primary non-fossiliferous, than with the succeeding formations, forming centres in gneiss and mica slate, and rising above them in magnificent pinnacles; it is therefore in the primary region that granitic mountains may be expected to predominate; of this we find an instance in the Grampian chain which stretches in a N.E. and S.W. direction, intersecting the country.

The *granite* is most largely developed on the N.E. side of the country; it there commences about the parallel of Stonehaven, extends northward to Peterhead and Banff; and, in a westerly direction, along the courses of the Dee and the Don; and still continues along the banks of the Tilt, Loch Ericht, Loch Lydoch, and terminates in this line near Oban and Fort-William; from the latter rises Ben Nevis, composed of granitic sienite. But this is not the only range. Another may be traced commencing in the north between Thurso and Portskerry, which passes along, at irregular distances, near Loch Baden, the neighbourhood of Dornoch, Loch Oich, on the line of Loch Ness, and terminates in a lofty mountain at the head of Loch Sunart on the west coast. Granite is found in several of the Western Isles, as in Rum, and is magnificently displayed in the Isle of Arran;—Goatfell and the surrounding peaks are of granite. The granitic summits of these mountains form the highest land in Britain. Ben Nevis is 4,373 feet above the level of the sea, and Ben Macdui rises about 17 feet higher. Though the granitic formation covers a greater area, and rises to a greater altitude in the north than in the south of Scotland, yet the latter is not deficient in this interesting rock. It rises through the older greywacké (the Cumbrian system) in Dumfries-shire; occupies a great space in New Galloway and in Kirkcudbright; and near Kirkmaiden, in the form of dykes.

In some of those mountains, stones fit for the purposes of the jeweller have been found. The mountain Cairngorm, in Inverness-shire, has long been celebrated for its *rock crystal*, of a smoke-brown colour, and named *Cairngorm* from its locality, which, when cut by the lapidary, is highly esteemed for its colour and brilliancy, and is employed for seals, brooches, and other ornamental purposes. *Topazes* of a light blue colour, and sometimes of very large size, have occasionally been found on the same mountain, and also *beryl* (aqua marine), more rarely.

Unstratified rocks of every other kind also prevail in Scotland; including all the varieties of TRAP, (commonly named *whinstone*), *basalt*, *greenstone*, *compact felspar*, *pitchstone*, *porphyries*, and *amygdaloids*, which in many parts display ranges of symmetrical columns, sometimes of great extent—as at Arthur Seat near Edinburgh, in several parts of the coast of Fife, in the islands of Eigg, Arran, Lamlash, and in the incomparable Staffa. But we shall attend to the distribution of these rocks throughout the country.

They are connected with the older greywacké and red sandstones of the south of Scotland. Trap forms a great part of the Cheviots on the borders, and passes northwards into the districts of Dunse, Coldstream, Kelso, Melrose, Selkirk, and Roxburghshire, rising into beautiful dome-shaped hills. Hounam Law, the Eildons, and Ruberslaw (the last, near 1,500 feet high), may be cited as examples. But in the great central valley of Scotland, beginning at Montrose on the east coast, Trap hills appear in patches in the old red sandstone, passing in an irregular line to the Firth of Tay, from the south-eastern extremity of which they proceed in a south-westerly course, without interruption, but varying greatly in breadth, through Dunning, Kinross, and Stirling, to Dumbarton. Another line, but less continuous, commences about Cupar, near St. Andrews, along the coasts of Fifeshire, and appears in groups about Linlithgow, Bathgate, near Glasgow, onwards to Paisley, and thence to Greenock, where it is greatly expanded, and turns north to the banks of the Clyde nearly opposite the Dumbarton range. A third parallel range, also in interrupted masses, commences at Dunbar, is continued in the Pentlands, Tintoc, and other hills in Lanarkshire, and in Ayrshire, about Kilmarnock, Ayr, and New Cumnock.

In Gallowayshire, trap is in some parts greatly expanded. A few of those localities may be mentioned, as we are not aware that any public notice has yet been given of its existence in those parts. A dyke of greenstone occurs near Kirkcolmpoint in greywacké, at the western extremity of Loch Ryan; Cairn Pat, between Stranraer and Port-Patrick is also greenstone; and thence, the greywacké of the whole coast to the Mull of Galloway is intersected by dykes and hills of several varieties of trap. On the northern side of Loch Ryan, it is seen involved amongst the roofing slates of the Cairn; and a range of trap hills extends thence, rising through the greywacké, flanking the edge of the loch, taking a south-easterly direction, passing by Castle Kennedy to the north, and onwards to New Luce. Here it expands to an enormous extent in every direction; to the south it approaches Glenluce Bay. At Knocky-Bay, a short distance north of New Luce, a lead mine was at one time worked, but becoming unproductive, was abandoned.

It may, however, be observed, that the greatest developement of trap is in the great central coal district, where it has fractured the strata, and raised the edges of the coal seams to the surface, an important natural operation, by which coal and its other useful accompaniments—ironstone, limestone, and building materials, have been made known and accessible.

In the trap rocks of Scotland many interesting minerals are found. The far-famed *Scotch agate* or *pebble* abounds in nodules included in trap, near Montrose, Perth, and other places; and many of the most beautiful of the zeolites are found among the hills around Dumbarton, the opposite side of the Clyde, and in many other localities.

The coal-fields constitute the principal mineral treasures of Scotland. The great coal district extends across the island from the eastern corner, or, as the district is termed in lowland Scotch, the "East Neuk" of Fife, to the mouth of the Clyde in Dumbartonshire on the west, and into East Lothian on the east. It is not, however, continuous throughout the whole distance, but consists rather of a succession of large detached coal-fields. Its superficial extent has been estimated at nearly 1000 square miles; and it has also been calculated that, according to the present consumption, it may be worked with advantage during 3000 years. The *Fife coal-field*, north of the Forth, extends from Stirling to St. Andrew's, and is in some places 10 miles broad. The richest portion of it lies between Dysart and Alloa. The *Lothian coal-field*, on the south and east of Edinburgh, is about 25 miles in length, with a breadth of five or six, and covers an area of 80 square miles. To the westward of Edinburgh there is no coal for several miles; but at *Bathgate*, workable beds are found, which extend westward, with some interruptions, to the neighbourhood of Glasgow, forming the great *coal-field of Lanarkshire*. The Clyde and the Forth form the boundaries of this field; but beyond Blantyre, the coal extends on the south side of the Clyde to the Cathkin-hills. After passing Glasgow, the coal-field stretches westward from the south bank of the Clyde, and occupies the valley in the line of the Ardrossan Canal, extending through Renfrewshire to *Dalry* in Ayrshire; the most southerly point being at *Girvan*. Several small fields occur at different parts of the south of Scotland, particularly at Sanquhar, in Dumfries-shire, and Canoby, in the same county, on the borders of

England. Coal is found also at *Brora* in Sutherlandshire, and Campbelton in Cantyre, but in insignificant quantities. Besides the fossil fuel yielded by the coal-fields, *ironstone* of excellent quality abounds in many of them: and is smelted to a great amount, and manufactured into articles suited for every useful purpose, at the great works of Carron, Shotts, Cleland, Airdrie, Clyde, Wilsontown, Muirkirk, Glenbuck, and some other places. It is the abundance and cheapness of coal in its vicinity that has enabled Glasgow to rival Manchester as a manufacturing emporium.

Next to coal and ironstone, the most valuable mineral product of Scotland is *lead*, of which there are rich mines at Leadhills and Wanlockhead, in the Lowther Hills, on the borders of Lanarkshire and Dumfries-shire. Lead is also procured at Dollar in Clackmannanshire, Strontian in Argyleshire, Belleville in Inverness-shire, and Leadlaw in Peebles-shire. A considerable quantity of *silver* is extracted from the lead. Particles of *gold* have frequently been found in the small streams among the Lowther hills, and also immediately under the vegetable soil which covers the surface of the latter.

Scotland abounds in quarries of the finest building materials, particularly *sandstone*, — hence the beauty of the numerous public edifices which adorn its cities and towns. The principal sandstone quarries are Craigleith, a little to the west of Edinburgh; Binnie, near Uphall, Linlithgowshire; Humbie, near South Queensferry, also in Linlithgowshire; Giffneugh, near Glasgow, Lanarkshire; Longannet, near Kincardine, Perthshire; and Milnefield or Ringoodie, near Longforgan, Perthshire. *Roofing-slates*, only inferior to those procured in Wales, are quarried extensively at Ballachulish, and in the island of Easdale, both in Argyleshire. *Granite* is brought from Aberdeen to pave the streets of London; and the granite of Kirkcudbright has been partly used in the construction of the Liverpool Docks. *Variegated* or *veined Marble*, of a beautiful appearance, is found in Sutherlandshire, at Glentilt in Perthshire, at Tyree in Argyllshire, at Muriston in West-Lothian, and in other places.

The most remarkable of the medicinal mineral springs in Scotland are — the sulphurous waters of *Strathpeffer*, near Dingwall, Ross-shire; *Muirtown*, in the same neighbourhood; *Moffat*, in Dumfries-shire; and *St. Bernard's*, at Stockbridge, a suburb of Edinburgh; — the chalybeats of *Hartfell*, near Moffat; *Vicar's Bridge*, near Dollar, Stirlingshire; and *Bonnington*, near Edinburgh; — the saline waters of *Dunblane*, near Stirling; *Airthrey*, also near Stirling; *Pitcaithly*, near Perth; and *Innerleithen*, near Peebles. No warm springs have as yet been discovered in Scotland. At *St. Catherine's*, in the parish of Liberton near Edinburgh, there is a spring which yields asphaltum in considerable quantities.

SOIL AND VEGETATION. — As may be inferred from the previous descriptions of the general aspect and geology of Scotland, the soils of its various districts are exceedingly diversified, and it would be difficult to classify or describe them within the limited compass of a work like the present. The following is Mr. Couling's estimate of the general distribution of the surface of Scotland: —

	Square Miles.
Arable and Gardens,	3,896
Meadows, Pastures, and Marshes,	4,329
Wastes capable of improvement,	9,297
Wastes incapable of improvement,	13,318
Total,	30,840

Having already entered into details concerning the climate both of England and Scotland, it need only at present be repeated, that the difference in this respect between the two countries may be explained by the more northern situation of the the latter, by mountainous groups and other local causes. This difference, however, is by no means inconsiderable, and it is plainly exhibited in the phenomena of vegetation. Notwithstanding the very advanced state of agriculture in many districts of Scotland, the crops are not reaped with the same certainty as in England, and the expectations of the farmer are more frequently disappointed. Neither do the ordinary kinds of grain arrive at the same perfection; thus, although Scotch and English barley may be of the same weight, the former is not sold at so high a price; it contains less saccharine matter, and yields a less quantity of malt. Fruits which ripen in the one country, seldom arrive at maturity in the other, and never in the same perfection; while different berries acquire in Scotland somewhat of that delicious flavour which distinguishes them in still higher parallels.

ANIMALS. — The animal kingdom of Scotland presents most of the features of that of England, and it would be to trench on the provinces of natural history were we to attempt to discriminate the differences between them. In regard to domestic animals, many of the most esteemed breeds which have originated in England have been transferred to congenial districts in Scotland; and in return, the latter has furnished England with others of a valuable description. The most noted of the breeds of

domestic animals peculiar to Scotland are the Clydesdale horse; the Shetland pony, the cattle breeds of Argyleshire and the Hebrides, Galloway, Ayrshire, Buchan (north of Aberdeenshire); Forfarshire, and Orkney and Shetland; and the Shetland sheep, remarkable for the fineness of its wool.

People and Languages. — Scotland contains at least two distinct races: the Lowlanders and the Highland Celts. The Lowland Scots are a very mixed people, being the descendants of the ancient Britons and Cymry, with an intermixture of Picts, Saxons, Danes, Normans, French, and English. Their language is radically akin to that of England, and the dialect which is still spoken by the peasantry may probably be considered as a fair specimen of that which at one period prevailed over a large portion of the island. The intimate intercourse which has existed between the two divisions of the island since the Union, has introduced the modern English language in its purer form, which is now employed by the higher classes. The Highlanders are now found in their original purity only to the north and west of the Grampians Whether they are the descendants of the original population of Britain, or the offspring of an Irish colony from Ulster, who effected a settlement in Argyleshire in the beginning of the sixth century of the Christian era, is a point upon which antiquarians are not agreed. It is at least certain that their language (called Erse, or Gaelic) is so very nearly related to the Irish, that the two are mutually understood by the more intelligent natives of both countries. The English, however, or, as they call it, the *Sassenach* (*i. e.* Saxon) language, along with the Sassenach manners and customs, are gradually extending themselves over every part of the Highlands; and being the language of civilization and trade, will probably ere long entirely supplant the Erse as the vernacular tongue of the Scoto-Celts.

Population. — The population of Scotland was determined for the first time with tolerable accuracy in the year 1755. It was then ascertained, chiefly from returns furnished by the clergy, to be about 1,265,380. In 1801, it amounted, according to the Parliamentary census, to 1,599,068; in 1811, to 1,805,688; in 1821, to 2,093,456; in 1831, to 2,365,114; and in 1841, to 2,628,957.

Religion and Ecclesiastical Divisions. — The national Established Church of Scotland, is, as we have already stated (*ante*, p. 121), Calvinistic in doctrine, and Presbyterian in government. At present (1839) the officiating clergy are in number about 1,165. Of these, 945 are the ordinary parochial clergy. The remaining number consists of ministers of churches in the Highlands and Islands, which have been built and endowed by Government, and of chapels or *Chapels of Ease*, originally constituted in connection with the Established Church. To both of these classes of clergymen there are now, agreeably to a law passed by the General Assembly in 1833, districts assigned, under the denomination of parishes *quoad sacra*, and which form deductions from the limits of the civil parishes. The officiating clergy in the civil parishes are in number (exclusive of assistants) 945, and each of them (except in burghs) is entitled to a house, offices, a small piece of ground called a glebe, and a stipend out of the teinds or tithes of his parish. Where the available tithe produces less than £150 a-year, the deficiency is made up from Government funds. Some of the livings yield several hundred pounds a-year; but the average, including the value of the manse and glebe, probably does not exceed £260. The government of the Church of Scotland, or *Kirk of Scotland*, as it is properly called, is purely republican, and its ministers claim the inherent right of the church to manage its own affairs independently of the civil government. The whole country is divided into 919 parishes, in each of which there is a kirk-session, composed of the minister, and one or more lay elders. Several parishes are united to form a Presbytery, the court of which is composed of all the ministers and one ruling elder from each parish. Several presbyteries form a Synod, the court of which is composed of all the members of the several presbyteries within its bounds; and, lastly, the general affairs of the kirk, and all its inferior judicatories, are superintended by the General Assembly, which meets at Edinburgh once a-year, in presence of a High Commissioner, who represents the Sovereign.* In ecclesiastical matters an appeal

* In 1843, a great schism or disruption took place in the Church of Scotland. For a long period the Church had been divided into two great parties, the evangelical and the moderate,—the former claiming for the Church the privilege of perfect independence of the State, while the latter submitted to the State's practical, if not theoretical supremacy, and were on that account branded by their antagonists as Erastian. Latterly, the evangelical principles, after long quiescence, began again to acquire an ascendancy, and, under the influence of that party, the General Assembly of 1834 passed an Act, giving to congregations an absolute veto on the appointment of their ministers. After a long litigation, the Veto Act was declared by the Courts of Law to be *ultra vires* of the Church, and the party, being then hopeless of seeing their principles carried out, resolved to secede. This

may be taken from a presbytery to the synod in whose bounds it is situate, and from this to the General Assembly, whose decision is final.

The first of the two following tables contains the names of the synods and of the presbyteries included in each; the population of the former in 1831; and the existing number of parishes and ministers.

Synods.	*Presbyteries.*	*Parishes.* (Civil.) Parochial Charges.	Ministers.	*Parishes.* (Quoad Sacra.) Parliament. Churches.	Chapel Districts.	Ministers.
1. LOTHIAN and TWEEDDALE,...	Edinburgh, Linlithgow, Biggar, Peebles, Dalkeith, Haddington, Dunbar. — *Population*, 313,733.	108 ..	116 ..	0 ..	27 ..	27
2. MERSE and TEVIOTDALE,.....	Dunse, Chirnside, Kelso, Jedburgh, Lauder, Selkirk. — *Population*, 82,366.	66 ..	66 .	0 ..	5 ..	5
3. DUMFRIES,.....	Lochmaben, Langholm, Annan, Dumfries, Penpont.— *Population*, 91,287.	55 ..	55 ..	0 ..	4 ..	4
4. GALLOWAY,.....	Stranraer, Wigton, Kirkcudbright.— *Population*, 65,276.	37 ..	37 ..	0 ..	0 ..	0
5. GLASGOW and AYR,.....	Ayr, Irvine, Paisley, Greenock, Hamilton, Lanark, Dumbarton, Glasgow.— *Population*, 635,011.	130 ..	133 ..	0 ..	72 ..	72
6. ARGYLL,.....	Inverary, Dunoon, Kintyre, Islay and Jura. Lorn, Mull.— *Population*, 109,348.	39 ..	41 ..	12 ..	4 ..	16
7. PERTH and STIRLING, ...	Dunkeld, Weem, Perth, Auchterarder, Stirling, Dumblane. — *Population*, 178,657.	80 ..	82 ..	3 ..	19 ..	22
8. FIFE,.....	Dunfermline, Kirkaldy, Cupar, St. Andrews. — *Population*, 138,124.	67 ..	71 ..	0 ..	10 ..	10
9. ANGUS and MEARNS,.....	Meigle, Forfar, Dundee, Brechin, Arbroath, Fordoun. — *Population*, 164,017.	80 ..	82 ..	0 ..	17 ..	17
10. ABERDEEN,.....	Aberdeen, Kincardine-O'Neil, Alford, Garioch, Ellon, Deer, Turriff, Fordyce. — *Population*, 206,226.	101 ..	102 ..	0 ..	17 ..	17
11. MORAY,.....	Strathbogie, Abernethy, Aberlour, Forres, Elgin, Inverness, Nairn.— *Population*, 105,610.	51 ..	54 ..	2 ..	3 ..	5
12. ROSS,.....	Chanonry, Dingwall, Tain. — *Population*, 45,803.	23 ..	23 ..	3 ..	1 ..	4
13. SUTHERLAND and CAITHNESS,....	Dornoch, Tongue, Caithness.— *Population*, 60,057.	23 ..	23 ..	5 ..	1 ..	6
14. GLENELG,.....	Lochcarron, Abertarff, Skye, Uist, Lewis. — *Popul.* 91,584.	29 ..	29 ..	11 ..	0 ..	11
15. ORKNEY,.....	Kirkwall, Cairston, North-Isles. — *Population*, 26,716.	18 ..	19 ..	2 ..	0 ..	2
16. SHETLAND,.....	Lerwick, Burravoe. — *Population*, 29,392.	12 ..	12 ..	2 ..	0 ..	2
		919	945	40	180	220

TABLE of PRESBYTERIES, CIVIL PARISHES, and PARLIAMENTARY CHURCH STATIONS, with the POPULATION of each Presbytery in 1831.

*** The numerals affixed to the names of Presbyteries indicate the Synods in which they are included, in the order of the previous Table.

Presbyteries.	*Parishes (Civil), and Parliamentary Church Stations.*
ABERDEEN, (10.)..... (*Aberdeensh.* and *Kincardinsh.*)	*Aberdeen* (7 *parishes, including* 8 *charges*); Banchory-Devenick; Belhelvie; Drumoak; Durris; Dyce; Fintray; Kinnellar; Machar (New); Maryculter; Newhills; Nigg; Peterculter; Skene.— *Population*, 75,524.
ABERLOUR, (11.)..... (*Banffsh.* and *Elginsh.*)	Aberlour; Boharm and Dundurcus; Inveraven; Knockando; Rothes.— *Population*, 8,515.
ABERNETHY, (11.)..... (*Elginsh. Inverness-sh.* and *Banffsh.*)	Abernethy; Alvie; Cromdale; Duthill; Kingussie; Kirkmichael.— *Parliamentary churches*, Rothiemurchus; Inch; Tomantoul.— *Population*, 12,134.
ABERTARFF, (14.)..... (*Inverness-sh.*)	Boleskine and Abertarff; Kilmalie; Kilmanivaig; Laggan; Urquhart and Glen-Moriston.— *Parliamentary churches*, Ballahulish and Corran of Ardgour.— *Population*, 14,402.

they carried into effect in 1843,—a large body of ministers and elders then constituting themselves into the *Free Church of Scotland*, and assuming themselves to be the only successors of the Original Church as established at the first and second Reformations, in 1560 and 1638. Their avowed object is to supersede and entirely supplant the Established Church, and with that view, they have already erected upwards of 700 new churches throughout Scotland. From coalescing with the other Presbyterian churches in Scotland they are prevented by their still clinging to the principle of establishments,—they conceiving it to be the State's duty to endow the *true* Church, which of course they assume themselves to be, without interfering with its government.

Presbyteries.	*Parishes (Civil), and Parliamentary Church Stations.*
ALFORD, (10.) *(Aberdeensh.* and *Banffsh.)*	Alford; Auchindoir; Cabrach; Clatt; Glenbucket; Keig; Kildrummy; Kinnethmont; Lochel and Cushnie; Strathdon; Tough; Towie; Tullynessle and Forbes.—*Population*, 11,471.
ANNAN, (3.) *(Dumfries-sh.*	Annan; Cumbertrees; Dornock; Graitney or Gretna; Hoddam; Kirkpatrick-Fleming; Middlebie; Ruthwell.—*Population*, 15,672.
ARBROATH, (9.) *(Forfarsh.)*	Arbirlot; Arbroath; Barry; Carmylie; Guthrie; Inverkeillor; Kinnell; Kirkden; Lunan; Panbride; St. Vigean's.—*Population*, 23,270.
AUCHTERARDER, (7.) *(Perthsh.* and *Kinross-sh.)*	Auchterarder; Blackford; Comrie; Crieff; Dunning; Fossaway; Foulis (Wester); Gask; Glendevon; Madderty; Monivaird; Monzie; Muckart; Muthill; Trinity-Gask.—*Population*, 25,339.
AYR, (5.) *(Ayrsh.)*	Auchinleck; Ayr (2 *charges*); Barr; Coylton; Craigie; Cumnock (New); Cumnock (Old); Dailzie or Dailly; Dalmellington; Dalrymple; Dundonald; Galston; Girvan, Kirkmichael; Kirkoswald; Mauchline; Maybole; Monkton; Muirkirk; Newton-on-Ayr; Ochiltree; Riccarton; St. Quivox; Sorn; Stair; Straiton; Symington; Tarbolton.—*Population*, 77,884.
BIGGAR, (1.) *(Lanarksh.* and *Peeblesh.)*	Biggar; Broughton; Glenholm and Kilbucho; Covington and Tankerton; Culter; Dolphington; Dunsyre; Libberton; Skirling; Symington; Walston; Lamington and Wandell.—*Population*, 6,862.
BRECHIN, (9.) *(Forfarsh.)*	Brechin (2 charges); Caraldstone; Craig; Dun; Edzel; Farnwell; Fern; Lethnot; Lochlee; Logie-Pert; Marytown; Menmuir; Montrose (2 charges); Stricathrow or *Strucathrow.*—*Population*, 17,057.
BURRAVOE, (10.) *(Shetland)*	Delting; Fetlar; Nesting; Northmavin; Unst; Yell.—*Population*, 12,960.
CAIRSTON, (15.) *(Orkney.)*	Birsay and Harray; Firth and Stennis; Hoy and Græmsay; Orphir; Sandwick; Stromness; Walls and Flota.—*Population*, 10,149.
CAITHNESS, (13.) *(Caithness-sh.)*	Bower; Canisbay; Dunnet; Halkirk; Latheron; Olrick; Reay; Thurso; Watten; Wick.—*Parliamentary churches*, Berriedale; Keiss.—*Population*, 35,542.
CHANONRY, (12.) *(Ross-sh.* and *Cromartysh.)*	Avoch; Cromarty; Killearnan; Kirkmichael; Kneckbain; Rosemarkie; —*Population*, 11,744.
CHIRNSIDE, (2.) *(Berwickshi.)*	Aytoun; Chirnside; Coldingham; Coldstream (anciently Lennel); Edrom; Eyemouth; Foulden; Hutton; Ladykirk; Mordington and Lamberton; Swinton; Whitsome and Hilton.—*Population*, 14,975.
CUPAR, (8.) *(Fifesh.)*	Abdie; Auchtermuchty; Balmerino; Ceres; Collessie; Criech; Cults; Cupar (2 *charges*); Dairsie; Dunbog; Falkland; Flisk; Kettle; Kilmany; Logie; Monimail; Moonzie; Newburgh; Strathmiglo.—*Population*, 29,832.
DALKEITH, (1.) *(Edinburghsh.* and *Haddingtonsh.)*	Borthwick; Carrington; Cockpen; Cranstoun; Crichton; Dalkeith; Fala and Soutra; Glencross; Heriot; Inveresk; Laswade; Newbattle; Newton; Ormiston; Penicuick; Temple.—*Population*, 35,133.
DEER, (10.) *(Aberdeensh.)*	Aberdour; Crimond; Deer (New); Deer (Old); Fergus (St.); Fraserburgh; Longside; Lonmay; Peterhead; Pitsligo; Rathen; Strichen; Tyrie.—*Population*, 32,276.
DINGWALL, (12.) *(Ross-sh. Nairnsh.* and *Inverness-sh.)*	Alness; Contin; Dingwall; Fodderty; Kilmorack; Kiltern; Urquhart and Logie Wester, Urray.—*Parliamentary churches*, Carnock; Keanloch; Luichart.—*Population*, 17,762.
DORNOCH, (13.) *(Sutherlandsh.)*	Assynt; Clyne; Criech; Dornoch; Golspie; Kildonan; Lairg; Loth; Rogart.—*Parliamentary church*, Stoer.—*Population*, 17,284.
DUMBARTON, (5.) *(Dumburtonsh.* and *Stirlingsh.)*	Arroquhar; Baldernock; Balfron; Bonhill; Buchanan; Cardross; Drymen; Dumbarton; Fintry; Killearn; Kilmaronock; Kilpatrick (New); Kilpatrick (Old); Luss; Roseneath; Row; Strathblane.—*Population*, 34,287.
DUNBLANE, (7.) *(Perthsh. Stirlingsh.* and *Clackmannansh.)*	Aberfoyle; Balquhidder; Callander; Dunblane; Kilmadock or Doune; Kincardine; Kippen; Lecropt; Logie; Menteith (Port of); Tillicoultry; Tulliallan.—*Population*, 24,213.
DUMFRIES, (3.) *(Dumfriesh-sh.* and *Kirkcudbrightsh.)*	Caerlaverock; Colvend; *Dumfries* (2 *parishes*); Dunscore; Holywood; Kirkbean; Kirkgunzeon; Kirkmahoe; Kirkpatrick-Durham; Kirkpatrick-Irongray; Lochrutton; New-Abbey; Terregles; Tinwald; Torthorwald; Troqueer; Urr.—*Population*, 34,862.
DUNBAR, (1.) *(Haddingtonsh.* and *Berwicksh.)*	Colbrandspath or Cockburn's path; Dunbar; Innerwick; Oldhamstocks; Prestonkirk; Spott; Stenton; Whitekirk and Tyningham; Whittingham.—*Population*, 12,472.
DUNDEE, (9.) *(Forfarsh.* and *Perthsh.)*	Abernyte; Auchterhouse; *Dundee* (6 *parishes*); Inchture; Kinnaird; Liff and Binvie; Longforgan; Lundie and Fowlis; Mains and Strathmartine; Monifieth; Monikie; Murroes or Muirhouse; Tealing.—*Population*, 60,510.
DUNFERMLINE, (8.) *(Fifesh. Kinross-sh.* and *Perthsh.)*	Aberdour; Beath; Carnock; Cleish; Culross (2 *charges*); Dalgety; Dunfermline (2 *charges*); Inverkeithing; Kinross; Orwell; Saline; Torryburn.—*Population*, 36,097.
DUNKELD, (7.) *(Perthsh.)*	Auchtergaven; Blair-Atholl; Caputh; Cargill; Clunie; Dunkeld and Dowally; Dunkeld (Little); Kinclaven; Kirkmichael; Lethendy and Kinloch; Moulin; Rattray.—*Population*, 22,130.
DUNSE, (2.) *(Berwicksh.)*	Abbey St. Bathans; Bunkle and Preston; Cranshaws; Dunse; Eccles; Fogo; Greenlaw; Langton; Longformacus; Polwarth.—*Pop.* 9,391.
DUNOON, (6.) *(Argylesh.* and *Butesh.)*	Dunoon and Kilmun; Inverchaolan; Kilfinnan; Kilmodan; Kingarth; Lochgoilhead; Rothesay; Strachur.—*Population*, 13,712.
EDINBURGH, (1.) *(Edinburghsh.)*	Colington; Corstorphine; Cramond; Currie; Duddingston; *Edinburgh* and *Leith* (18 *parishes, including those of* St. Cuthbert's, South Leith, *and* North Leith, *in all* 25 *charges*); Kirknewton; Libberton; Ratho.—*Population*, 180 392.
ELGIN, (11.) *(Elginsh.)*	Alves; Andrews-Lhanbride (St.), Birnie; Drainy; Duffus; Elgin (2 *charges*); Speymouth; Spynie (New); Urquhart.—*Population*, 15,790.
ELLON, (10.) *(Aberdeensh.)*	Cruden; Ellon; Foveran; Logie-Buchan; Methlic; Slaines; Tarves; Udny.—*Population*, 12,831.
FORDOUN, (9.) *(Kincardinesh.)*	Arbuthnott; Benholme; Bervie; Cyrus (St.); Dunottar; Fettercairn; Fettcresso; Fordoun; Garvock; Glenbervie; Kinneff and Caterline; Laurencekirk; Marykirk.—*Population*, 22,601.

Presbyteries.	*Parishes (Civil), and Parliamentary Church Stations.*
FORDYCE, (10.) (*Banffsh.*)	Banff; Boyndie; Cullen; Deskford; Fordyce; Ordiquhil; Rathven.—*Population*, 18,136.
FORFAR, (9.) (*Forfarsh.*)	Aberlemno; Cortachy; Dunnichen; Forfar; Glammis; Inverarity; Klnnettles; Kirriemuir; Oathlaw; Rescobie; Tannadice.—*Population*, 24,225.
FORRES, (11.) (*Elginsh.*)	Dunas; Dyke; Edinkillie; Forres; Kinloss; Rafford.—*Population*, 9,899.
GARIOCH, (10.) (*Aberdeensh.*)	Bourtrie; Chapel-of-Garioch; Culsalmond; Daviot; Insch; Inverury; Keith-hall and Kinkell; Kemnay; Kintore; Leslie; Meldrum (Old); Monymusk; Oyne; Premnay; Rayne.—*Population*, 15,787.
GLASGOW, (5.) (*Lanarksh. Stirlingsh. Dumbartonsh.* and *Renfrewsh.*)	Cadder: Campsie; Carmunnock; Catheart; Cumbernauld; Eaglesham; *Glasgow* (12 *parishes, including those of* Gorbals *and the* Barony); Govan; Kilsyth; Kirkintulloch; Rutherglen.—*Population*, 240,374.
GREENOCK, (5.) (*Renfrewsh. Ayrsh.* and *Butesh.*)	Cumbraes; Erskine; Greenock (3 *parishes*); Innerkip; Kilmacolm; Largs; Port-Glasgow.—*Population*, 41,179.
HADDINGTON, (1.) (*Haddingtonsh.*)	Aberlady; Athelstaneford; Bolton; Dirleton; Garvald; Gladsmuir; Haddington (2 *charges*); Humbie; Moreham; North-Berwick; Pencaitland; Prestonpans; Saltoun; Tranent; Yester.—*Population*, 24,049.
HAMILTON, (5.) (*Lanarksh.*)	Avondale or Strathaven; Blantyre; Bothwell; Cambuslang; Cambusnethan; Dalserf; Dalziel; Glassford; Hamilton (2 *parishes*); Kilbride (East); Monkland (New); Monkland (Old); Shotts; Stonehouse.—*Population*, 64,745.
INVERARY, (6.) (*Argylesh.*)	Craignish; Inverary (2 *charges*); Kilmartin; Kilmichael-Glassary; Knapdale (North); Knapdale (South.)—*Parliamentary church*, Lochgilphead.—*Population*, 13,335.
INVERNESS, (11.) (*Inverness-sh.* and *Nairnsh.*)	Daviot; Dores; Inverness (3 *charges*); Kiltarlity; Kirkhill; Moy and Dalarossie; Petty.—*Population*, 25,193.
IRVINE, (5.) (*Ayrsh.* and *Renfrewsh.*)	Ardrossan: Beith; Dalry; Dreghorn; Dunlop; Fenwick; Irvine; Kilbirnie; Kilbride (West); Kilmarnock (2 *parishes*, 3 *charges*); Kilmaurs; Kilwinning; Loudoun; Stevenston; Stewarton.—*Population*, 56,226.
ISLAY and JURA, (6.) (*Argylesh.*)	Jura and Colonsay, Kilarrow; Kilchoman; Kildalton.—*Parliamentary churches*, Kilmeny, Oa, Portnahaven.—*Population*, 17,197.
JEDBURGH, (2.) (*Roxburghsh.*)	Ancrum; Bedrule; Cavers; Crailing; Eckford; Hawick; Hopekirk or Hobkirk; Hownam; Jedburgh; Kirkton; Minto; Oxnam; Southdean; Wilton.—*Population*, 20,978.
KELSO, (2.) (*Roxburghsh.*)	Ednam; Kelso; Linton; Makerston; Morebattle; Nenthorn; Roxburgh; Sprouston; Stitchel and Hume; Yetholm.—*Population*, 12,264.
KINCARDINE-O'NEIL, (10.). (*Aberdeensh.* and *Kincardinesh.*)	Aboyne; Banchory-Ternan; Birse; Cluny; Coul; Crathie and Braemar; Echt; Glenmuick; Kincardine-O'Neil; Logie and Coldstone; Lumphanan; Midmar; Strachan; Tarland and Migvie.—*Population*, 18,426.
KINTYRE, (6.) (*Argylesh.* and *Butesh.*)	Campbelton (2 *charges*); Gigha and Cara; Kilbride (*I. of Arran*); Kilcolmonell and Kilberry; Killean; Kilmory; Saddel and Skipness; Southend.—*Population*, 26,959.
KIRKALDY, (8.) (*Fifesh.* and *Kinrosssh.*)	Abbotshall; Auchterderran; Auchtertool; Ballingray; Burntisland; Dysart (2 *charges*); Kennoway; Kinghorn; Kinglassie; Kirkaldy; Leslie; Markinch; Portmoack; Scoonie; Wemyss.—*Population*, 43,314.
KIRKCUDBRIGHT, (4.) (*Kirkcudbrightsh.*)	Anwoth; Balmaclellan; Balmaghie; Borgue; Buittle; Carsphairn; Crossmichael; Dalry; Girthon; Kells; Kelton; Kirkcudbright; Parton; Rerrick; Tongland; Twynholm.—*Population*, 21,666.
KIRKWALL, (15.) (*Orkney.*)	Andrew's (St.); Evie; Holme; Kirkwall (2 *charges*); Ronaldshay (South); —*Parliamentary church*, Deerness.—*Population*, 8,650.
LANARK (5.) (*Lanarksh.*)	Carluke; Carmichael; Carnwath; Carstairs; Crawford; Crawfordjohn; Douglas; Lanark; Lesmahagow (2 *charges*); Pittenain; Wistoun and Robertown.—*Population*, 29,595.
LANGHOLM, (3.) (*Dumfries-sh.* and *Roxburghsh.*)	Canobie; Castleton; Eskdalemuir; Ewes; Half-Morton; Langholm; Westerkirk.—*Population*, 10,173.
LAUDER, (2.) (*Berwicksh., Roxburghsh.*, and *Edinburghsh.*)	Channelkirk; Earlston; Gordon; Lauder; Legerwood; Mertoun; Smailholm; Stow: Westruther.—*Population*, 9,964.
LERWICK, (16.) (*Shetland.*)	Bressay; Dunrossness; Lerwick; Sandsting; Tingwall; Walls.—*Parliamentary churches*, Quarff; Sandwick.—*Population*, 16,432.
LEWIS, (14.) (*Ross-sh.*)	Barvas; Lochs; Stornoway; Uig.—*Parliamentary churches*, Cross; Knock.—*Population*, 14,541.
LINLITHGOW, (1.) (*Linlithgowsh.* and *Stirlingsh.*)	Abercorn; Bathgate; Borrowstounness; Calder (Mid); Calder (West); Carriden; Dalmeny; Ecclesmachen; Falkirk; Kirkliston; Linlithgow; Livingstone; Muiravonside; Polmont; Queensferry; Slamannan; Torphichen; Uphall; Whitburn.—*Population*, 45,452.
LOCHCARRON, (14.) (*Ross-sh.* and *Invernesssh.*)	Applecross; Gairloch; Glenelg; Glenshiel; Kintail; Lochalsh; Lochbroom; Lochcarron.—*Parliamentary churches*, Shildag; Poolewe; Plockton; Ullapool.—*Population*, 21,350.
LOCHMABEN, (3.) (*Dumfriesh.*)	Applegarth; Dalton; Dryfesdale; Hutton; Johnstone; Kirkmichael; Kirkpatrick-Juxta; Lochmaben; Moffat; Mouswald; Mungo (St.); Tundergarth; Wamphray.—*Population*, 16,016.
LORN, (6.) (*Argyllsh.*)	Ardchattan; Glenorchy; Kilbrandon; Kilchrennan and Dalavich; Kilmore: Kilninver; Lismore and Appin.—*Parliamentary churches*, Muckairn; Duror.—*Population*, 15,348.
MEIGLE, (9.) (*Forfarsh.* and *Perthsh.*)	Airlie; Alyth; Bendochy; Blairgowrie; Cupar-Angus; Essie; Glenisla; Kettins; Kingoldrum; Lintrathan; Meigle; Newtyle; Ruthven.—*Population*, 16,345.
MULL, (6.) (*Argyllsh.*)	Ardnamurchan; Kilfinichen; Kilninian; Morven; Tirce; Torosay.—*Parliamentary churches*, Strontian; Iona or Icolmkill; Tobermory; Kinlochspelvie; Salen; Aucharacle; Ulva.—*Population*, 22,797.

Presbyteries.	*Parishes (Civil), and Parliamentary Church Stations.*
NAIRN, (11.) *(Nairnsh. Inverness sh.)*	Ardclach; Ardersier; Auldearn; Cawdor; Croy; Nairn.—*Population*, 10,265.
NORTH ISLES, (15.) *(Orkney.)*	Cross and Burness; Lady; Rousay and Egilshay; Shapinshay; Stronsay and Eday; Westray and Papa-Westray.—*Parliamentary church*, Ronaldshay (North.)—*Population*, 7,917.
PAISLEY, (5.) *(Renfrewsh.)*	Eastwood or Pollock; Houstoun; Inchinnan; Kilbarchan; Lochwinnoch; Mearns; Neilston; *Paisley* (4 *parishes, in all* 5 *charges*); Renfrew.—*Population*, 90,721.
PEEBLES, (1.) *(Peeblesh.)*	Drumelzier; Eddlestone; Inverleithen or Innerleithen; Kirkurd; Linton (West); Lyne and Megget; Manor; Newlands; Peebles; Stobo; Traquair; Tweedsmuir.—*Population*, 9,373.
PENPONT, (3.) *(Dumfries-sh.)*	Closeburn; Durrisdeer; Glencairn; Keir; Kirkconnel; Morton; Penpont; Sanquhar; Tinron.—*Population*, 14,564.
PERTH, (7.) *(Perthsh.)*	Aberdalgie; Abernethy; Arngask; Collace; Dron; Dunbarney; Errol; Forgandenny; Forteviot; Kilspindie; Kinnaunes; Kinnoull; Madoe's (St.); Martin's (St.); Methven; Monedie; *Perth* (4 *parishes*); Redgorton; Rhynd; Scone; Tibbermore.—*Population*, 45,237.
ST. ANDREW'S, (8.)	Abercrombie; Anstruther (Easter); Anstruther (Wester); Cameron; Carnbee; Crail; Denino; Elie; Ferryport-on-Craig; Forgan; Kemback; Kilconquhar; Kilrenny; Kingsbarns; Largo; Leuchars; Newburn; Pittenweem; St. Andrew's (2 *parishes, in all* 3 *charges*).—*Population*, 28,881.
SELKIRK, (2.) *(Selkirksh. and Roxburghsh.)*	Ashkirk; Boswell's (St.); Bowden; Etterick; Galashiels; Lilliesleaf; Maxton; Melrose; Roberton; Selkirk; Yarrow.—*Population*, 14,788.
SKYE, (14.) *(Inverness-sh.)*	Braeadale; Duirnish; Kilmuir; Portree; Sleat; Small Isles; Snizort; Strath.—*Parliamentary churches*, Stencholl; Hallin in Waternish.—*Population*, 23,862.
STIRLING, (7.) *(Stirlingsh. and Clackmannansh.)*	Airth; Alloa and Tillibody; Alva; Bothkennar; Clackmannan; Denny; Dollar; Gargunnock; Larbert and Dunipace; Ninians (St.); Stirling (3 *charges*.)—*Population*, 44,603.
STRANRAER, (4.) *(Ayrsh. and Wigtonsh.)*	Ballantrae; Colmonell; Inch; Kirkcolm; Kirkmaiden; Leswalt; Luce (New); Luce (Old); Port-Patrick; Stonykirk; Stranraer.—*Population*, 24,164.
STRATHBOGIE, (11.) *(Elginsh. Banffsh. and Aberdeensh.)*	Bellie or Fochabers; Botriphnie; Cairnie; Gartly; Glass; Grange; Huntly; Keith; Marnock; Mortlach; Rhynie; Rothiemay.—*Population*, 23,814.
TAIN, (12.) *(Ross-sh. and Cromartysh.)*	Eddertoun; Fearn; Kilmuir-Easter; Kincardine; Logie-Easter; Nigg; Rosckeen; Tain; Tarbet.—*Parliamentary church*, Croich.—*Population*, 16,297.
TONGUE, (13.) *(Sutherlandsh.)*	Duirness; Eddrachillis; Farr; Tongue.—*Parliamentary churches*, Kinlochbervie; Strathy.—*Population*, 7,221.
TURRIFF, (10.) *(Banffsh. and Aberdeensh.)*	Alvah; Auchterless; Drumblade; Forglen; Forgue; Fyvie; Gamrie; Inverkeithing; King Edward; Monquhitter; Turriff.—*Population*, 21,775.
UIST, (14.) *(Inverness-sh. and Ross-sh.)*	Barra; Harris; Uist (North); Uist (South.)—*Parliamentary churches*, Bernera; Trumisgarry.—*Population*, 17,490.
WEEM, (7.) *(Perthsh.)*	Dull; Fortingall; Kenmore; Killin; Logierait; Weem.—*Parliamentary churches*, Foss, Innerwick in Glenlyon; Rannoch.—*Population*, 17,132.
WIGTON, (4.) *(Wigtonsh. and Kirkcudbrightsh.)*	Glasserton; Kirkcowan; Kirkinner; Kirkmabreek; Minnigaff; Moehrum; Penningham; Sorby; Whithorn; Wigton.—*Population*, 19,446.

In connexion with the Church of Scotland there are several synods, presbyteries, and congregations in England and in the British Colonies; but the presbytery of India alone sends representatives to the General Assembly. The *Presbyterian Church in England* consists of five presbyteries, viz. those of London, Lancashire, Newcastle-on-Tyne, North-West-of-England, and Berwick, which form one synod, and include 42 congregations. The Scottish Colonial Churches are thus grouped:—1*st*, The *Synod of Canada*, which consists of six presbyteries, namely, Hamilton, Quebec, Bathurst, Kingston, Toronto, and Glengary, and includes about 62 congregations;—2*d*, The *Synod of Nova Scotia*, which consists of the presbyteries of Halifax, Pictou, Prince Edward's Island, and Cape Breton, and includes 24 congregations;—3*d*, The *Synod of New Brunswick*, which consists of the presbyteries of St. John and Miramichi, and includes 12 congregations;—4*th*, The *Synod of New South Wales*, which consists of the presbyteries of Sydney and Hunter's River, and includes about 22 congregations;—5*th*, The *Presbytery of Van Diemen's Land*, including about 10 congregations;—6*th*, The *Presbytery of Guiana*, including 8 congregations. A branch of the Church of Scotland, consisting of three or four congregations, is established in Holland; and there are at present 7 Scottish presbyterian ministers settled at the Cape of Good Hope, 7 in different parts of the East Indies (Bombay, Calcutta, Madras, and Ceylon;) 2 in Jamaica, 2 in the island of Grenada, 2 in New Providence; 1 in Buenos Ayres; and 1 in Charleston, South Carolina. The Church of Scotland is also in communion with the General Synod of Ulster in Ireland, a numerous body, consisting of 24 presbyteries and 282 congregations, and with a number of presbyterian congregations in the north of England, but over these its ecclesiastical courts hold no control.

We have already adverted generally to the provision made for the ministers of the Scottish Church, which it will be seen from another statement (*antè*, p. 194) is somewhat under the average income of the beneficed clergy in England. The *teinds or tithes in Scotland appropriated to the payment of stipend* yield annually, on an average of several years, about £177,000, to which government adds a bounty of £12,000. These sums together give an average money income of about £200 a-year to each parochial minister. If we include the incomes of the ministers of the *quoad sacra* parishes, the gross revenue of the Church of Scotland will, exclusive of the annual value of the manses and glebes, exceed £200,000 yearly.

Patronage, or the right of nominating to a vacant parish or charge, is, with some modifications more or less considerable, recognised as the law of the church. A few years ago the right of presentation was thus distributed:—Of 943, the number of the then existing charges, Individuals presented to 582; the Crown to 274; Town-councils to 62; Heritors to 13; Universities and Societies to 6; Kirk-sessions to 2; and Heads of Families to 2; one congregation had the right of nominating its minister, and in the case of another charge, the patronage was disputed.

The *Dissenters* in Scotland compose probably about a third part of the entire population; but of these by far the most numerous bodies, namely the members of the Secession and Relief Churches, originally seceded only from the government of the Kirk, the forms of which they still retain, and

continue to adhere to its doctrinal standards, the Westminster Confession of Faith, with the Larger and Shorter Catechisms, at the same time disapproving of anything in these books which teaches compulsory or persecuting and intolerant principles in religion, or the recognition of the power of the civil magistrates in religious concerns. Of late years, however, many of these dissenters have carried their complaints beyond their original great practical grievance, viz. the undue exercise of patronage, and now denounce all connexion between the Church and the State as unscriptural. The United Secession Church or United Associate Synod (commenced in 1736), is the largest dissenting body in Scotland. At present it is divided into 22 presbyteries, which have under their inspection 361 regularly organized congregations (exclusive of mission stations), with 126,070 communicants. Its annual revenue, derived from the contributions of its adherents, is about £66,000, of which £47,315 is paid in stipends to the ministers. The Reformed Presbyterian Church, which holds the views of some of the original seceders, is settled both in Scotland and Ireland; in the former it numbers 35 congregations, divided into 5 presbyteries; and in the latter 27 congregations, divided into 4 presbyteries. Its communicants in Scotland amount to about 10,000. The Synod of Relief (commenced in 1755), a body which separated itself from the Established Church solely on the ground of patronage, numbers 10 congregations, divided into 11 presbyteries, having in all about 50,000 communicants, and affording church accommodation to 100,000 individuals. The Independents, or Congregationalists, have 96 chapels in various parts of Scotland, but the number of the adherents of the body is not accurately known. The Baptists, though highly respectable as a body, are not numerous in Scotland, and the same may be remarked of the Methodists; the chapels belonging to all descriptions of the latter may be about 18, and the number of their members under 5000. The adherents of the Scottish Episcopal Church, which, as we have already stated (*anté*, p. 121), is completely independent of the Church of England, are not numerous, but they form a large proportion of the upper classes. At present their chapels number about 77, and are divided into six dioceses, the prelates of which have the Bishop of Edinburgh for their primate. The number of Catholics in Scotland is unknown even to their own clergy; it is supposed that Glasgow and its vicinity contains about 50,000, Edinburgh 14,000, Paisley 10,000, Dundee 6,000, and Greenock, Aberdeen, and Dumfries, together 7,000. The total number of Catholic chapels in Scotland is 65, besides 20 stations where divine service is performed. Swedenborgians and other sectaries are found in the metropolis and principal towns, in which also a number of Jews are resident.*

EDUCATION.—Towards the end of the seventeenth century, the Parliament of Scotland enacted that schools should be established in all the parishes of the kingdom; and, with the exception of a few of the more remote Highland parishes, the order was generally complied with. The schoolmasters are appointed by the heritors or landholders, and clergy, and are under the superintendence of the presbyteries of their bounds. They are each provided by the heritors with a comfortable dwelling-house, and a school-room; and are paid partly by small salaries, and partly by fees from their pupils. The parochial schools were originally intended as auxiliaries to the ministry of the Church, and as preparatory seminaries for the four Universities established in the cities of St. Andrews, Aberdeen, Glasgow, and Edinburgh; and the result has been the very general diffusion of literary education among the people of Scotland. Though very inadequately remunerated, the parish schoolmasters are, and have always been, one of the most respectable classes of the community; and not a few of them have been distinguished for their literary attainments. In the cities and burghs there are High-schools and Grammar-schools, which are generally under the patronage of the magistrates. The whole body of burgh and parochial schoolmasters now form a sort of corporation, and have a fund for the benefit of their widows and children, to which each of them is obliged to contribute a small sum annually.

Besides these public establishments, and a very large number of congregational schools by the different bodies of dissenters, and especially by the Secession Church, there are numerous private schools and academies in every part of the kingdom; and academies upon a large scale have been established in several places, sometimes by proprietary bodies, and sometimes from funds bequeathed by individuals for the purpose. Of the latter kind is the academy at Dollar, in Clackmannanshire, which was originally intended to form a sort of college, or minor university, but has been converted into a school for classical and commercial education. Every exertion has of late been made to extend the advantages of education to the scattered inhabitants of the more remote country districts, and to the masses of the inferior population of large towns. The schools in connexion with the Parliamentary churches in the Highlands, and which for the most part were erected by the landed proprietors, have received an endowment from Government. The General Assembly's Subscription Schools, the scheme of which originated in 1824, now amount in number, in the Highland districts, to 97, and in the Lowlands to 20; the total number of pupils instructed being upwards of 9000, to which number must be added the youthful population of Highland districts which have been benefited by the benevolent exertions of the Celtic Society, the Gaelic School Society, and other bodies. Schools supported by the munificent bequest of the late Dr. Bell of Madras, are now in operation in some of the principal towns of Scotland; and the example set in the case of the recent application, by legislative authority, of the surplus revenues of George Heriot's Hospital in Edinburgh, to the purposes of general education in that city, will no doubt soon be followed by similar arrangements in reference to other wealthy educational charities throughout the country. From a return made to the General Assembly in regard to the presbyterial examination of schools in 1839 (of which 237 were non-parochial), embracing an aggregate number of 152,281 pupils, it appears that the number learning Greek was 524; Latin, 3,201; Mathematics, 2,301, Geography, 13,120; French, 1,053.

The statistics of *Sunday Schools* in Scotland are at present very imperfect. In 1825 there were throughout the country 1,577 schools, attended by 80,190 scholars. The instruction given in these schools is entirely of a religious nature.

The result of the actual working of the machinery of primary education in Scotland will be best understood from the following Parliamentary report (Session 1837, vol. XLVII.) the result of returns made by the parochial clergymen:—

* In May 1847, the United Associate Synod and the Relief Synod coalesced into one new body, under the name of the *United Presbyterian Church*. It comprehends twenty-eight presbyteries; and has a Divinity Hall, for the instruction of students for its ministry, consisting of five professors.

COUNTIES.	No. of Parochial Schools.	No. of Instructors.	Salaries.	Total Incomes, including Salaries, Fees, and other Emoluments.	No. of Schools Non-parochial.	No. of Instructors.
Aberdeen,	93	96	£2,509 17 10	£4,873 14 10¼	347	379
Argyle,	74	78	1,347 16 1	2,401 6 7	200	207
Ayr,	46	62	1,624 12 10¾	3,485 9 11½	225	241
Banff,	25	29	761 18 6¾	1,304 10 7½	125	131
Berwick,	34	40	1,049 16 0¾	2,224 14 6½	59	60
Bute,	10	10	181 9 10¾	320 9 10¾	30	34
Caithness,	10	11	345 17 3½	639 14 3½	86	86
Clackmannan,	5	6	159 6 6½	307 10 6½	26	39
Dumbarton,	13	15	412 1 7½	714 8 11¼	54	55
Dumfries,	65	69	1,641 16 4	2,968 3 1	129	143
Edinburgh,	32	40	1,183 19 8¾	2,518 13 8¼	460	640
Elgin,	21	27	688 17 4	1,044 13 5	70	88
Fife,	55	61	1,831 18 9½	3,576 2 1¾	223	252
Forfar,	53	60	1,717 18 6½	3,353 16 6½	223	255
Haddington,	30	32	858 5 11	1,784 3 3½	51	55
Inverness,	34	34	877 11 3	1,335 15 11	122	127
Kincardine,	22	22	670 16 0	1,168 13 11	85	86
Kinross,	5	7	170 17 1	338 7 1	13	15
Kirkcudbright,	49	55	1,163 10 5	2,223 14 7¾	56	60
Lanark,	72	90	1,611 18 7½	3,868 19 2¼	352	376
Linlithgow,	13	13	426 8 8¾	845 16 1¾	48	55
Nairn,	4	4	137 17 6¾	189 17 6¾	14	15
Orkney and Shetland,	28	29	738 6 2½	928 9 11½	113	113
Peebles,	16	17	494 3 10	853 8 8¾	14	17
Perth,	73	75	2,384 15 7	4,011 18 10¾	251	259
Renfrew,	19	22	463 7 4¾	897 4 10¾	169	193
Ross and Cromarty,	33	33	983 7 4	1,421 5 5½	124	129
Roxburgh,	44	50	1,144 15 2	2,303 3 3½	68	80
Selkirk,	5	8	165 10 11½	351 10 11½	13	14
Stirling,	33	39	956 14 2½	1,675 9 6½	121	138
Sutherland,	13	15	420 6 7¾	574 5 10¾	43	45
Wigton,	18	21	516 18 7¾	928 2 9¾	81	83
TOTALS,	1047	1170	£29,642 18 11¼	£55,339 17 1½	3,995	4,469

With regard to attendance on these seminaries, the greatest number at parochial schools, allowing for defective returns, between Lady Day (25th March) and Michaelmas (29th September), was 71,426; the least at any period of the year, 50,029; at non-parochial schools, the greatest number was 189,427; the least, 139,237. It thus appears that, taking the largest amount of attendance, a ninth of the whole population of Scotland are, on an average, undergoing education in public schools, either parochial or non-parochial. This is exclusive of private boarding-schools, both for males and females, and of those who are educated under domestic tutors. The average income of the 1047 parochial teachers, exclusive of assistants, is £52 : 17s. But this does not include their official allowance of a house and garden, or money in lieu of them.

There are, as we have already stated, four *Universities in Scotland*, namely those of Edinburgh, Glasgow, Aberdeen, and St. Andrews, all of which, with the exception of the first, had their origin previous to the period of the Reformation. The University of St. Andrew's was founded in 1411, by Henry Wardlaw, Bishop of the Diocese, and was confirmed by the authority of Pope Benedict the Thirteenth, in 1413; Glasgow University was established in 1450, by Pope Nicolas the Fifth, on the application of King James II.; that of Aberdeen was erected by a bull of Pope Alexander the Sixth in 1494; and that of Edinburgh was founded by King James VI. in 1582. The Universities of Edinburgh and Glasgow consist of one college each; that of Aberdeen comprehends King's College, founded by King James IV. in 1494, and Marischal College, founded by the Earl Marischal, under royal authority, in 1593. St. Andrew's University, which, a few years after the date of its foundation, was reconstructed upon a more extensive plan, formerly consisted of St. Salvator's College, founded in 1456, by James Kennedy, Bishop of the See; St. Leonard's College, founded 1512, by Alexander Stuart, Archbishop of St. Andrew's, and John Hepburn, Prior of the Metropolitan Church of that city; and St. Mary's College, founded by Archbishop James Beaton, in 1537; but the first two of these were united in 1747. The constitutions of the several Scottish Universities is, with the exception of that of Edinburgh, nearly the same in each. A *Senatus Academicus*, consisting of the different professors, has the power of conferring degrees, of determining the academical *curriculum*, and of managing the affairs of the University, while the guardianship of the statutes, privileges, and discipline of the latter is vested in a civil functionary called the Lord Rector, who is annually elected by the students. In Edinburgh, however, the patronage of the University and the appointment of nearly all the professors is vested in the Town-Council, and the office of Lord Rector, which is merely nominal, is held *ex officio* by the Lord Provost of the city. In the Universities of Glasgow, Aberdeen and St. Andrew's, the senatus elect an honorary officer, with the title of Chancellor, whose appointment is for life. The discipline of the Scottish Universities differs materially from that of the older of the kindred institutions in England. The students are not obliged to reside within the walls of the Universities, nor, with the exception of those of Glasgow and St. Andrews, are they required to wear any distinguishing dress. Students are admitted to all the Universities without any reference to religious creeds or sects, although the Professors are required by law to subscribe the Confession of Faith and the standards of the Established Church. Exclusive of lectureships, of which several, principally medical, are attached to the Universities of Glasgow, Aberdeen, and St. Andrew's, the number of professorships in the Scottish Colleges is as follows:—Edinburgh 30, Glasgow 19, King's College, Aberdeen, 9, Marischal College 10, and St. Andrew's 11. The average annual income of each professor, derived from endowments, is about £300 in Glasgow (exclusive of four regius professorships in that University, which average about £400), £230 in Aberdeen and St. Andrew's, and £120 in Edinburgh; seven medical professorships in the last-named University, to which no salary is attached, are not taken into account in computing this average. Two years ago the aggregate number of students in the Scottish Universities was above 3,550, of which Edinburgh had 1,459, and Glasgow above two-thirds of the remaining number.

GOVERNMENT. — The laws of Scotland, like those of England, are a heteroge-

neous ill-digested mass, the growth of ages, and derive their authority principally from the decisions of the supreme courts, or from established usage. They are administered by two supreme courts, the *Court of Session*, and the *High Court of Justiciary*. The Court of Ssesion is not only the supreme civil court of law, but also, by virtue of its inherent supremacy, exercises the ministerial functions of the courts of Chancery in England, in respect to the guardianship of children, idiots, lunatics, and the property of absentees; and in all cases decides according to equity as well as law. From its decisions there is an appeal in the last resort to the House of Lords at Westminster. The High Court of Justiciary is confined to the trial of matters criminal only, and is strictly supreme, there being no appeal from its decisions. Every shire, or county, is placed under the charge of a *Sheriff*, who is both judge and magistrate. As a Judge, he possesses very nearly the same powers within his shire as the judges of the supreme courts exercise over the kingdom; his decisions, however, are in all cases subject to the review of the superior judges. As a Magistrate, he is the principal conservator of the peace within his county, and in common with the justices, regulates all matters of police. He also makes the returns of members of Parliament. In every shire there is likewise a certain number of Justices of Peace, appointed by the Crown; but, except in some matters of police, they have been nearly superseded in their functions by their stipendiary coadjutors, the Sheriff and his Substitutes. The *Magistrates* of royal and parliamentary burghs are invested with very considerable, but ill-defined powers, nearly equal to those of sheriffs; and the chief magistrates of Edinburgh, Stirling, and Perth, are also sheriffs within the municipal limits, The prosecution of crimes is not left, as in England, to the zeal or vengeance of private parties. There is in Scotland an officer of the Crown, of high official rank and dignity, styled *Her Majesty's Advocate*, or, by courtesy, the *Lord Advocate*, who, with the assistance of the Solicitor-general and several Advocates-depute, superintends the whole criminal business of the country, and acts as public prosecutor in such cases as he thinks fit to be brought before the High Court of Justiciary. In every shire and burgh there is a similar officer, styled the Procurator-fiscal, whose business it is to inquire into all outrages and breaches of the peace committed within his bounds; and to prosecute before the sheriff or other judge-ordinary, or magistrate, those crimes and misdemeanours to which his powers are limited. These functionaries act under the orders and directions of the Lord Advocate, and report to him all their proceedings in criminal matters. The orders or decrees of the supreme court are executed by a class of officers styled *Messengers-at-Arms*, appointed by the Lord-Lyon King-at-Arms; and all writs or letters of diligence, as they are technically called, are directed to these officers as 'sheriffs in that part;' so that each writ contains in itself a special commission of sheriffship. The lowest officers of the law are sheriff-officers, town-officers, and justice-of-peace constables, with one solitary official, who is lower still, the hangman of Edinburgh, the only person of his profession at present existing between York and Shetland.—There is no political government of Scotland distinct from that of Great Britain.

PUBLIC REVENUE.—The public revenue of the kingdom of Scotland is derived from the Customs, Excise, Stamps, Assessed and Land Taxes, Postage, and the hereditary revenues of the Crown. The total amount for the year ending 5th January 1838 was £5,036,458, the net amount £4,692,724. Of this sum the Customs produced, £1,626,291—net, £1,511,972; the Excise, £2,431,963—net, £2,201,482; the Stamps, £529,538—net, £521,556; the Land and Assessed taxes, £227,607—net, £227,520; the Post Office, £221,059—net, £209,604; and the Crown revenues, £20,590 net. There is no national debt distinct from that of the United Kingdom; and the public expenditure cannot well be ascertained apart from that of Great Britain.

PRODUCTIVE INDUSTRY.—Many of the statistical details connected with this subject, being applicable to Great Britain as a whole, will be found under the corresponding head in England and Wales, (See *anté*, pp. 201–216.) We adjoin some farther brief notices, most of which are in continuation of statements given in regard to England alone.

Agriculture.—"The grand characteristics of Scotch agriculture are," as Mr. M'Culloch states, "1*st*, The nearly universal prevalence of leases of a reasonable endurance, and containing regulations as to management, which while they do not improperly shackle the tenant, prevent the land from being exhausted previously to the termination of the lease; 2*d*, The absence of tithes, and in most cases also of poor-rates, and of all oppressive public burdens; 3*d*, The prevention of assignment and sub-letting by tenants, and the descent of the lease to the heir-at-law; and, 4*th*, The general introduction of thrashing machines and other improved implements, and the universal use of the two-horse plough and one-horse cart." These circumstances combined with the progress of manufactures, have, notwithstanding the inconsiderable extent of arable land in Scotland, compared with the wide

expanse of its mountain and moorland tracts, given a high character to Scottish husbandry, and placed the farmer in a state of comfort or opulence probably far beyond what those of the same class enjoy in any other country. The most fertile tracts in Scotland are found in Berwickshire and the Lothians; in the shires of Dumfries, Ayr, Renfrew and Lanark; in Fifeshire; in Perthshire and Forfarshire (in which two counties is situate, the rich alluvial carse or plain of Gowrie, stretching from Perth to Dundee, and in the first named county the fertile Valley of Strathern, situate to the west of Perth); and to a smaller extent in Aberdeenshire and Elginshire. Wheat of fine quality is grown in many of these districts, but the standard crops throughout the country are oats. Turnip husbandry is very extensively carried on in Haddingtonshire and Berwickshire, and throughout these and the other eastern counties a large quantity of potatoes is cultivated for the supply of the London market. The dairy-farm districts of Scotland are principally those of Ayrshire, Renfrewshire, and Dumfrieshire. The cheese made at Dunlop in the first named of these counties is famed all over the kingdom.

Only about a fourth part of the surface of Scotland is susceptible of cultivation, and even of that nearly a half is in grass. The following table shews the distribution of the land under tillage, with the quantity and value of the crops.

Produce.	*Acres.*	*Produce per Acre.*	*Total Produce.*	*Price per Quarter.*	*Value.*
Wheat,.....	220,000	3 qrs.	660.000	50s.	£1,650,000
Barley,..... ..	280,000	3½	980,000	30s.	1,470,000
Oats,.....	1,275,000	4½	5,737,000	25s.	7,171,875
Pease and Beans,.	100,000	..	..	..	....
Potatoes,.....	130,000	} £5 5 0	..	..	2,250,000
Turnips,.....	350,000	}			
Flax,.....	16,000	8 0 0	..	..	128,000
Gardens,.....	32,008	13 0 0	..	..	416,000
Fallow, ...	150,000	..	..	..	....
TOTAL,.....	2,553,000				£13,355,875

The value of the annual produce of the arable soils in pasture is averaged at £2 per acre; giving a total value of £4,979,450; and the value of 14,000,000 of acres of mountain pasture, waste land, and plantations, at an average value of 3s. per acre, will be £2,100,000. Hence the total annual value of the land produce of Scotland will amount to £20,435,325.

Fisheries.— Scotland has long been famous for its fisheries, which were for some time encouraged by bounties and premiums on the part of Government; but though these have now ceased, the trade is still as thriving as it was when under that stimulus. The salmon-fishery is the most valuable; and its principle seats are the rivers Tay, Tweed, Dee, Don, Findhorn, Spey, Ness, Conon. The total value has been estimated at £150,000 a-year; but it has experienced great fluctuations, and within the last twenty years a very considerable diminution, particularly in the Tweed. The herring-fishery has long been carried on to a great extent, and much capital has been invested in it. The principal stations are on the coasts of Caithness and the Moray Firth, also at Dunbar, in East Lothian; Loch Broom, Loch Fine, and various other places on the West Coast. In 1834, the herring, cod, and ling fisheries employed 9,263 boats, 48,700 fishermen, 1893 coopers, and 28,645 people in cutting, packing, &c.—making a total of 79,238. A large bed of oysters exists in the Firth of Forth, opposite Edinburgh; and the beds belonging to the city were lately let on lease at £600 a-year; many millions of oysters are exported annually, to the great profit and advantage of the fishermen of Newhaven and Prestonpans.

Manufactures.—The linen manufacture was the earliest, and was long regarded as the staple manufacture; but such were the narrow limits within which it was confined that, at the Union in 1707, it was supposed not to exceed 1,500,000 yards a-year. In 1727, a board of trustees was established for the superintendence and encouragement of the linen trade, and bounties and premiums were given upon its production and exportation; but the regulations of the board were abolished in 1822, and the bounties ceased in 1830. Dundee and the eastern coasts, including Fife, are the great seats of this trade, particularly in osnaburghs, sail-cloth, and the coarser fabrics; Dunfermline and its vicinity, form the principal seat of the damask, diaper, and finer fabrics. The yarn is now mostly spun by mills; and the number of flax, hemp, and tow-factories in 1837, was 175, employing 15,462 workers. Lanarkshire and Renfrew have always been the principal seat of the cotton manufacture. The number of cotton factories in 1837 was 177, the larger ones being all situate in Glasgow and its vicinity, except five in Aberdeenshire, two in Perthshire, one in Dumfries-shire, and one at Gatehouse, in Kirkcudbrightshire. The number of cotton-mills working in 1838 was 192; and the number of people employed was 35,576. The woollen manufacture has never been considerable. Factories for the making of fine cloth have been established in Aberdeenshire, Galashiels, and other places; but coarse fabrics still continue to be the staple manufacture. The number of woollen or worsted factories, in 1837, was 104, situated mostly at Aberdeen, Clackmannanshire, Hawick, Galashiels, Jedburgh, and in Stirling, Argyle, and Inverness-shires. Hawick is principally devoted to the production of woollen hose, blankets, and flannels. Stirling and Bannockburn are almost exclusively the seat of the tartan manufacture; carpets are also made to a considerable extent at Bannockburn and St. Ninians; Kilmarnock is chiefly noted for carpets and shawls, besides large numbers of night-caps, bonnets, and military foraging caps. The woollen factories, in 1837, employed 4339 work-people. The silk manufacture is less considerable than that of woollen. Its principal seats are Paisley, Glasgow, and Edinburgh. Soap has long been manufactured to a great extent, and the principal works are at Glasgow, Leith, Paisley, Aberdeen, Prestonpans, and Montrose. The distillation of spirits has also been an important branch of industry; but has been subjected to many fluctuations from the repeated changes of regulations and duties. The quantity produced in 1838 amounted to 6,124,035 gallons, for home consumption; and in the same year there were exported to England, 2,215,329 gallons, and to Ireland 861,069. Ale is brewed to a considerable extent, principally in Edinburgh and its vicinity. The principal seats of the iron trade are mentioned at page 268.

Commerce.—Scotland shares to a considerable extent in the general trade of the kingdom; her exports consisting of agricultural produce, but mostly of the manufactured articles produced in the neighbourhood of Glasgow, Aberdeen, and Dundee. Her imports consist of the raw materials necessary for those manufactures, and of such articles of foreign and colonial produce, as are required for the comfort or luxury of her small population. The extent and value of her import trade may be estimated from the following table of the customs paid at each of the ports of Scotland in the year 1847.

Aberdeen,	£65,330	Glasgow,	£394,152	Leith,	£525,403
Ayr,	1,038	Grangemouth,	30,268	Lerwick,	396
Banff,	1,164	Greenock,	380,704	Montrose,	33,217
Bo'ness,	3,103	Inverness,	3,291	Port-Glasgow,	94,161
Campbeltown,	603	Irvine,	2,778	Stornoway,	435
Dumfries,	7,929	Kirkaldy,	4,192	Stranraer,	427
Dundee,	76,189	Kirkwall,	815	Wick,	696

See also the various tables and statements from page 201 to 216.

The banking system has been carried to great perfection in Scotland. The Scottish banks are now mostly joint-stock establishments, with large constituencies; and, except in the case of three public chartered banks, each partner is responsible to the extent of his fortune. The oldest of these, the Bank of Scotland, was established in 1695; the Royal Bank in 1727; the British Linen Company in 1746; and all the others within the present century, and most of them within a very few years. The present number of joint-stock banks in Scotland, is twenty-nine; but besides their head office, each of them has branches established in the principal towns of the kingdom. They all issue notes, which form the principal part of the currency of Scotland, gold being rarely met with; but no note can be issued of less value than twenty shillings, so that a silver currency remains sufficiently abundant. Over issues are also checked in some degree by a system of mutual exchange and security established by the banks themselves. In Edinburgh this exchange takes place twice a-week, in the country once a-week; and if, after an exchange, any bank has an overplus of the notes of any other, the latter must redeem them by a payment in specie, or exchequer bills, or by an order on the Bank of England. Each bank is also obliged to keep on hand a certain amount of exchequer bills, equal to the average amount of their issues.

INTERNAL COMMUNICATION. — Until after the middle of last century there was scarcely a good road in Scotland; but so great a change has since taken place, that excellent carriage roads now extend through every part of the country; and "in consequence of the excellent materials which abound in all parts of Scotland, and of the greater skill and science of Scottish trustees and surveyors, the turnpike-roads in Scotland are superior to those in England."—(*Sir H. Parnell's Treatise on Roads*, p. 313.) See Table of Roads, *anté*, p. 216.

§ *Canals.*

From the irregular nature of the ground in Scotland, the country is not well adapted for artificial inland navigation, and none of its rivers are naturally navigable above the reach of the tides. Still, some improvement in this respect has been effected; and the following is a concise account of the principal of these improvements, arranged alphabetically:—

Aberdeen Canal extends about 19 miles from the harbour of Aberdeen up the valley of the Don to Inverury. It was finished in 1808; but has never remunerated its proprietors, and is now in a somewhat decayed condition.

Ardrossan Canal was projected to extend from Glasgow through Renfrewshire and Ayrshire to Ardrossan, but has been executed only so far as Johnston, 12 miles south-west of Glasgow.

Caledonian Canal has been formed so as to connect the Lakes Ness, Oich and Lochy, with the Beauly Firth, above Inverness, on the north, and with Loch Eil on the south. It was intended to be made large enough for the passage, not only of merchant ships, but of frigates; but has been actually dug, in the highest part of its level, to the depth of only 15 feet. The highest level between the two seas is 94 feet at Loch Oich, which is gained by an ascent, from the north coast, of 13 locks, and, from the south coast, of twelve. The canal was executed at the public expense, and has cost £1,023,628; but it is so little used by the class of ships for which it was originally intended, that the dues do not nearly pay the annual expenses of management and repairs. The canal, however, has recently been made the subject of enquiry by select committees of the House of Commons, who have recommended that it should be put in an efficient state of repair, have its depth increased, and have steam-tugs; and that for these purposes, a sum not exceeding £200,000 should be placed at the disposal of Government; or, that it should be let on a lease, not exceeding 99 years, without rent, to a company, who should engage to put it into an efficient state, and keep it in repair, at the sight of the Government engineer.

Crinan Canal runs from Loch Gilp to Loch Crinan, the former an arm of Loch Fine, the latter of the Sound of Jura in Argyllshire, a distance of six miles; whereby the long and dangerous navigation round Cantire is saved to such vessels as can pass through the canal, which, however, contains only nine feet of water.

Forth and Clyde, or *the Great Canal*, extends from the Firth of Forth at Grangemouth, to Bowling-bay on the Firth of Clyde, a distance of 39 miles, with a summit level rising to 160 feet, which is gained by an ascent of 20 locks on the eastern side, and of 19 on the western. It is passable by vessels drawing eight feet water, and having 19 feet beam, with 73 feet of keel. A branch of it extends to Port-Dundas, on the north side of Glasgow, where it is connected with the Monkland Canal, and also with a new branch, named the *Forth and Cart Canal*, which extends to the Clyde, opposite the mouth of the Cart.

Monkland Canal runs about 18 miles eastward from Port-Dundas, and terminates about a mile and a half south of Airdrie. It is only six feet deep.

The Union Canal commences at Port-Hopetoun, on the west side of Edinburgh, and terminates in the Great Canal at Port-Downie, near Falkirk, a distance of 31 miles. It is quite on one level, and requires locks only where it descends at its western extremity to join the Forth and Clyde Canal. It was executed between 1818 and 1822, at the enormous expense of nearly half-a-million, and has proved a most ruinous speculation to the original shareholders.

§ *Railways.*

Several extensive undertakings of this kind are either in progress, or have been projected.

Edinburgh and Dalkeith Railway extends from Edinburgh to the River South Esk, at Dalhousie Mains, about eight and a half miles, with a branch to the town of Dalkeith, another to the harbour of Fisherrow, and a third to the harbour of Leith. From its southern termination there are two private branches which connect it with the collieries of Newbattle and Arniston.

Edinburgh and Glasgow Railway connects these two cities, by Linlithgow and Falkirk, a distance of 46 miles. It was opened in 1842.

Edinburgh, Leith, and Newhaven Railway, is intended to connect the city with its ports of Leith, Newhaven, and Granton, and is now in progress.

West Lothian Railway begins at the Union Canal, in the parish of Uphall, and proceeds past Whitburn to Shotts, a distance of about 23 miles.

Glasgow and Garnkirk Railway extends from Cargill Colliery, near Gartsherrie Bridge, where it joins the Monkland and Kirkintilloch Railway, in a westerly direction, to the junction of the Forth and Clyde, and Monkland Canals, near Glasgow, a distance of 8¾ miles.

Glasgow and Ayr Railway proceeds by Paisley and Dalry to the quay at Ayr, with branches connecting it with Kilmarnock, Irvine, Ardrossan, and Troon. The main line to Ayr is about 40 miles in length; and the Kilmarnock branch about 11.

Glasgow, Paisley, and Greenock Railway, extends from the south end of Glasgow Bridge, by Paisley to Greenock, a distance of 22½ miles, with a branch to Port-Glasgow. The portion between Glasgow and Paisley is eommon to the Glasgow and Ayr Railway.

Kilmarnock Railway extends from that town to the harbour of Troon, 9¾ miles.

Paisley and Renfrew Railway is 3¼ miles long, and forms a direct communication between Paisley and the Clyde at Renfrew Ferry.

Pollock and Govan Railway is intended to connect the mineral fields to the south-east of Glasgow with that city, and terminates at the harbour.

Monkland and Kirkintilloch Railway connects the coal districts in the parishes of Old and New Monkland, within 10 miles of Glasgow, with the Forth and Clyde Canal near Kirkintilloch. From the termination of this railway, in the parish of New Monkland, the *Ballochney Railway* extends about four miles eastward, where it separates into two branches: the one embracing the coal and ironstone mines to the south, and the other those to the north of the Hill of Airdrie. Another branch of the Monkland and Kirkintilloch Railway, named *The Wishaw and Coltness Railway*, extends about four miles southward from the termination of the former, in the parish of Old Monkland, and is intended to be carried to the estates of Wishaw, Coltness, and Allanton, which are believed to contain the largest and finest beds of coal in Scotland.

Slamannan Railway will extend from the east end of the Ballochney Railway to the Union Canal, near Linlithgow, a distance of about 12¾ miles, with a branch to Bathgate.

Dundee and Newtyle Railway extends from Dundee to Newtyle, Cupar-Angus, and Glammis, through a hilly country, where it reaches a summit level of 500 feet.

Dundee and Arbroath Railway extends between these towns a distance of 16¾ miles, and is nearly level throughout.

Arbroath and Forfar Railway extends between these towns a distance of 15¼ miles, with an ascent of about 220 feet, and is now connected with the Dundee and Arbroath Railway at Arbroath.

ADMINISTRATIVE DIVISIONS.—For upwards of a century and a half Scotland has been divided into thirty-three shires or sheriffdoms of very unequal extent. The parishes are also, in some respects, civil divisions; but do not in all cases correspond exactly with the boundaries of the shires. Lanark is subdivided into three wards, and Kirkcudbright bears the title of *Stewartry*. The following table contains the names of the shires, together with their ancient names, and the popular designations of their component parts, which formed so many ancient districts: —

Shires.	*Ancient Names and Divisions.*
Edinburgh,	Mid-Lothian.
Haddington,	East-Lothian.
Linlithgow,	West-Lothian.
Berwick,	Merse, Lauderdale, and Lammermuir.
Roxburgh,	Teviotdale and Liddesdale.
Selkirk,	Ettrick Forest.
Peebles,	Tweeddale.
Dumfries,	Nithsdale, Annandale, Eskdale.
Kirkcudbright,	East Galloway.
Wigton,	West Galloway.
Ayr,	Carrick, Kyle, and Cunningham.
Lanark,	Clydesdale.
Renfrew,	Renfrew and Strathgryfe.
Dumbarton,	Levenex, or Lennox.
Stirling,	Stirling.
Argyle,	Cowall, Lorne, Cantyre or Kintyre, Morven, Knapdale, &c.
Perth,	Perth, Stormont, Strathearn, Gowrie, Atbol, Breadalbane, Monteith, Glenshiel, Rannoeb, Balquhidder.
Clackmannan,	Clackmannan.
Kinross,	Kinross.
Fife,	Fife.
Forfar,	Angus.
Kincardine,	Mearns.
Aberdeen,	Mar, Buchan, Garioch, Formartin, Strathbogie.
Banff,	Strathdoveron, Boyne, Enzie, Balveny, Strathaven.
Elgin,	Moray, Murray or Murreff,—and part of Strathspey.
Nairn,	Moray, &c.
Inverness,	Lochaber, Badenoeh, parts of Moray, Ross, and Strathspey, Skye, and others of the Western Islands.
Cromarty, Ross,	Ross, Black Isle, &c., Island of Lewis.
Sutherland,	Sutherland, Strathnaver, Assynt, Edderachillis, Lord Reay's eountry.
Caithness,	Caithness.
Orkney and Shetland,	Orkney Islands, Shetland Islands.

§ *Cities and Towns.*

EDINBURGH, the metropolis of Scotland, is situate in the midst of hills, within two miles of the shore of the Firth of Forth, about 400 miles, travelling distance, N.N.W. of London, in north lat. 55° 57′ 20″, and west long. 3° 10′ 30″. It is built upon three distinct ridges of ground, divided by hollows, which are partly occupied by houses, and partly by gardens. Two of these ridges, with the intervening hollow, are covered by the Old Town and the Southern Districts, which form together one continuous mass of building. The third, or most northerly ridge, is separated from the central, or Old Town, ridge, by a deep hollow, which still retains the name of the North Loch, from its having been formerly in part covered with water, and by the Caltonhill. This singular eminence, on the north-east side of the city, rises to the height of 355 feet above the level of the sea, and forms a most agreeable place of recreation to the inhabitants. The Old and the New Towns are connected by the North Bridge across the east end, and a huge Earthen Mound across the

middle of the North Loch. From the Palace of Holyrood the central ridge rises gradually with an easy slope, through the distance of a mile, to the Castle, an ancient fortress, built on a precipitous basaltic rock, the top of which is 440 feet above the level of the sea, and 338 above the level of Holyroodhouse. The summit of the ridge, between the Castle and the Palace, is occupied by a long, winding, and in some parts very spacious street, the eastern portion of which is the Canongate, so celebrated in Scottish history and romance. It is now entirely deserted by the nobility and gentry, and left to the possession of the lowest class of the citizens. The northern ridge, rising abruptly from the North Loch, but falling with a long slope to the valley of the Water of Leith, on the north of the city, is occupied by the New Town, which has been all built since the year 1765, according to a regular plan, with spacious streets crossing each other at right angles, and interspersed with squares, circuses, crescents, and other open areas, which are laid out as gardens or pleasure grounds. The houses are built of light coloured sandstone, and have in general an elegant, though somewhat monotonous appearance. The whole city is about 7 miles in circuit, but a large portion of the ground within its limits is unoccupied by streets and houses. The population is estimated, according to the census of 1841, at 133,692; or, including Leith, which has been hitherto considered as a suburb of Edinburgh, being locally attached to it, 159,718.

The most prominent building in Edinburgh is the Castle, which is perched on a lofty rock, almost in the middle of the town, and forms the principal feature in the view from every direction. This is the original Edinburgh; the town which has grown up around it in the course of ages having only borrowed its name. Its early history is involved in uncertainty. It is supposed to have been the *Alata castra* of the Roman geographers; the *Castel-myned-agnes* of the aboriginal Britons; and to have derived its name of Edwinesburgh, from Edwin king of Northumberland, who rebuilt, or, according to some, first built a castle upon this site. Edinburgh Castle came into the possession of the kings of Scotland in the tenth century, and has formed ever since one of their principal fortresses. The only remains of royalty which it now possesses are the regalia of the ancient kings, consisting of the crown, sceptre, and sword of state. The castle is fortified with some regularity on the eastern side, next the city; but round the top of the rock there is nothing but a single wall, with batteries on the north-east side. It occupies an area of seven acres, and forms a sort of small town, having ample accommodation for a numerous garrison; but as a fortress it is incapable of defence, if regularly assailed. At the opposite end of the old town, on a low flat, is Holyrood-house, a place of the greatest historical and most romantic celebrity. In its modern form, which dates from the reign of Charles II., it is a very elegant square building, in the Roman style of architecture, inclosing a court, with gothic castellated towers at the two angles of the west front. The northern tower contains the apartments and relics of Queen Mary; and in the southern side of the square are the state rooms, which were for some time occupied by the French Royal Exiles, and were used by King George IV. during his visit to Scotland in 1822. At the north-eastern corner of the building are the remains of Holyrood Abbey, founded by King David I. in the year 1128, upon the spot where a holy rood (cross) fell from Heaven to rescue him from the furious onset of a stag, which turned upon him while hunting in the forest of Drumselch, which then occupied the park. It was built in the usual form of a cross; but the choir and transepts are completely obliterated, and of the nave, sometime occupied as the Chapel-Royal, nothing but the bare and roofless walls now remain. The precincts of the Abbey, about 4 miles in circumference, form an asylum for debtors against the claims of their creditors; a privilege which has occasionally been found of great advantage, and has seldom been much abused. The King's Park, about 3 miles in circumference, adjoins the palace, and consists of a singular assemblage of hills, rocks, and bogs, presenting everywhere the finest objects of study to the geologist; and serving as a place of healthful recreation to the citizens. In the middle of the park, Arthur's Seat rises to the height of 710 feet above the palace, and 822 above the level of the sea; and a little to the west, Salisbury Craigs, 550 feet high, present to the city, a long mural precipice of basaltic rock, and form one of the finest of its natural ornaments. The park, however, is destitute of wood; and the hills, being either quite bare, or covered with furze and thin soil, have rather a bleak appearance. Edinburgh contains many other elegant buildings, but none of historical celebrity, or very distinguished for their architectural beauty: except perhaps St. Giles's Church, the principal church of the city, which has recently been almost rebuilt, and possesses an ancient tower, surmounted by an open spire, in the form of an imperial crown; the College,

a very large structure, newly built; Heriot's Hospital, the finest architectural ornament of the city, said to have been built from a design by Inigo Jones; the Parliament House and Courts of Law, a huge irregular pile of building, mostly quite new, but still containing the great hall formerly used for the sittings of the Scottish Parliament; the Register-House, an elegant building, erected for the preservation of the public records of the kingdom; the County-Hall of Mid-Lothian; the Royal High School, on the south side, and Nelson's Monument, a very tasteless, but most conspicuous castellated tower, on the very top of the Calton-Hill.

Edinburgh is the seat of the Supreme Courts of Law, and the place where the General Assembly of the Kirk holds its annual meetings; but in no other respect is it now entitled to be called the capital of the kingdom, the seat of government for Scotland, as well as England, being in London and Westminster. It has long been deserted by the nobility of Scotland and the higher gentry; and even of the few gentry who have continued to fix their winter residence here, the long continued peace, and the ease and rapidity of modern travelling, are inducing one after another to remove to distant and more fashionable places of residence. Edinburgh is already connected with Glasgow by the Union Canal; a railway is also in progress, which will form another means of communication; and great exertions are making to render its ports of Leith, Newhaven, and Granton, easily accessible to shipping. The only branches of trade for which it is yet distinguished are the printing and publishing of books, and the brewing of ale, which is of excellent quality, and sent to all parts of the world.

Edinburgh is the seat of one of the four Universities of Scotland, which has long held a distinguished character as a medical school, and some of whose Professors have attained a high rank among men of science and literature. Besides the University, or "The College," as it is popularly called, there is also a Royal College of Physicians, who possess a very elegant hall in George Street; a Royal College of Surgeons, whose hall, recently erected in Nicolson Street, contains a large and valuable anatomical and surgical museum; a Royal Society, and a Royal Antiquarian Society, both of which have apartments in the Royal Institution, a massy Grecian pile, surrounded with heavy Doric columns, on the Earthen Mound; and many other minor societies and institutions for the promotion of science, literature, and religion. Of the only great public libraries, that of the Faculty of Advocates contains about 150,000 volumes; that of the Society of Writers to the Signet, 50,000; and that of the University, about 90,000. The first two are contained in a number of apartments below and adjoining the Parliament-House; the latter in a fine hall, built for its accommodation, which occupies the south side of the College Square. Edinburgh is also distinguished above most places for the number and extent of its endowed charitable institutions; the principal of which is Heriot's Hospital, founded by George Heriot, jeweller to King James VI., for the maintenance and education of the sons of poor freemen. About 200 boys are boarded, clothed, and educated in the house, and the surplus revenues, amounting to £3000 a-year, are now to be applied to the establishing of free schools throughout the city. The others are George Watson's, John Watson's, Donaldson's, the Orphan's, the Merchant-Maiden, and the Trades-Maiden Hospitals, and the Fettes Institution, for children; the Trinity and Gillespie's Hospitals for old people; besides the Workhouses for parish paupers and their children; and voluntary societies of every kind and for every purpose of charity. The Royal Infirmary, or General Hospital, is supported partly by voluntary contributions, partly by the fees of students, and partly by an accumulated fund of considerable amount.

GLASGOW, the great seat of Scottish manufactures, stands on the Clyde, about 43 miles, W. by S. of Edinburgh. The ground which it occupies on the north side of the river, consists of a flat tract of land, several miles in length, but seldom more than half a mile in breadth, beyond which there is a considerable elevation, forming the ridge on which the oldest part of the town is built. The ancient cathedral of St. Mungo, built in the 13th century, and the only one on the mainland of Scotland left entire by the Scottish Reformers, occupies a commanding site on the brow of this eminence, and is the point from which the streets and houses have been extended southwards towards the river, and also westward. The High Street extends from the cathedral southwards to the river, and about midway is crossed at right angles by a very long street, the western portion of which, called the Trongate and Argyle Street, is straight and spacious; while the eastern portion, called the Gallowgate, is somewhat tortuous, narrower, and of meaner appearance. From these

two main thoroughfares, streets branch off on all sides, but chiefly to the northwest and south. The most elegant buildings, and the houses inhabited by the wealthier citizens, are chiefly in the north-west quarter of the city; while the meaner streets, and the poorer citizens, are congregated in the east and south-east divisions. On the south side of the river, the continuous towns of Gorbals, Hutchisontown, Lauriestown, Tradestown, and Kingstown, occupy a considerable tract of ground, and are connected with the city by four elegant bridges. The Clyde has been made navigable up to Glasgow, and an extensive quay and commodious harbour have been formed at the Broomielaw, to the westward of the lowest bridge. The principal public buildings, besides the Cathedral, are the Royal Infirmary, and the Lunatic Asylum, both on the north side of the city; the College and Hunterian Museum, on the east side of the High Street; the Public Offices and Jail at the west end of the Green; the Anderson Institution in George Street; the Exchange Buildings, a very elegant and tasteful structure, in Queen Street, and Hutcheson's Hospital in Ingram Street.

Though, generally speaking, Glasgow is more distinguished for the wealth and industry, than for the literary and scientific attainments of her citizens, yet the College holds no mean rank among the educational institutions of Britain; and Anderson's Institution has been of incalculable advantage in disseminating useful knowledge among people who would otherwise not have possessed the means of attaining it. The former is one of the most complete and best regulated of the Scottish universities; it contains professors of every important and useful branch of science and literature, and is now little inferior to that of Edinburgh as a medical school. Anderson's Institution or University, was established in 1796, pursuant to the will of Mr. John Anderson, Professor of Natural Philosophy in the University, and now contains thirteen Professors, who deliver lectures on every branch of useful knowledge. As a seat of manufactures, however, Glasgow fairly rivals Manchester; and as a place of foreign commerce, is inferior only to Liverpool, though its proper harbour, Port Glasgow, is twenty miles farther down the river.

Originally and for many years an episcopal city, inhabited and patronized by churchmen, Glasgow has risen gradually from small beginnings to its present rank among the commercial towns of the empire. It was only, however, after the Union with England, in 1707, when the colonies of that country were opened up to Scottish enterprise, that the merchants of Glasgow began to trade with America and the West Indies. But to enumerate the steps by which Glasgow has become so great a manufacturing and trading city, is incompatible with our limits. The rate, however, of its progression may be estimated from the amount of its population at different periods. At the Reformation, in 1560, the population of Glasgow amounted to no more than 4500 souls; at the Union, in 1707, to 12,766; in 1755, to 23,546; in 1801, to 83,769; in 1811, to 110,460; in 1821, to 147,043; and in 1841, to 257,592. For the recreation of the citizens there is a fine lawn, of 100 acres, called the Green, lying along the river to the south-east of the city, where, in fine weather, are to be seen numerous groups of people, walking, or playing at cricket, golf, and other games. It contains Nelson's Monument, an obelisk of mason-work, 115 feet high.

§ 1. *Aberdeenshire.*

Aberdeen is situate on the north bank of the Dee, at the mouth of the river, and only a mile and a half from the mouth of the Don; in north lat. 57° 9′, and west long. 7° 8′ 20″, 127 miles north of Edinburgh. It consists of two towns, *Aberdeen* properly so called, and *Aberdon*, now always called *Old Aberdeen*. The former, which stands close upon the Dee, is a fine town, with broad and elegant streets, and public buildings, constructed in a style little inferior to those of Edinburgh; and enormous sums have been expended in improving the harbour, by forming docks, quays, and piers. It has become, of late years, a very flourishing place of trade; and the population, by the census of 1841, amounted to 62,900. Old Aberdeen is an inferior town or village, about a mile north of the city, and only remarkable for containing a very ancient church, and the King's College, a University founded in 1494. Marischal College, in New Aberdeen, was founded in 1593, by George, fifth Earl Marischal of Scotland. Both colleges are at present in a flourishing condition. *Peterhead*, 34 miles N.N.E. of Aberdeen, stands on a peninsula, and is a handsome town, with many well built and elegant houses. It has commodious harbours and a spacious basin, with room for sixty sail of ships. Peterhead is a place of considerable trade, and manufactures of thread, woollen cloth, and cotton goods, are extensively prosecuted by the inhabitants. *Fraserburgh*, on the south side of Kinnaird-head, 42 miles north of Aberdeen, is a considerable town, and is neatly and regularly built.

The herring-fishery is carried on here to a great extent, and also the manufacture and export of linen yarn. During the last war, a large harbour was constructed at the public expense, as a place of retreat for British ships of war which might suffer from stress of weather in the north sea. *Kintore* and *Inverury*, two decayed royal burghs on the Don, are connected with Aberdeen by a canal, which, however useful to the district, has not been productive to its proprietors, and is accordingly not kept in the best state of repair.

§ 2. *Argyleshire.*

Inverary, a very small town, on the north-west shore of Loch Fine, is the capital of this extensive county. It is remarkable only for its modern *Castle*, the principal mansion-house of the Duke of Argyle. *Campbeltown*, near the southern extremity of Cantire, at the head of a beautiful bay, is a neat modern town, and well sheltered. It was anciently the capital of the Dalriad Scots, the founders of the modern kingdom of Scotland; but no mark of such distinguished antiquity now exists in the neighbourhood. Its trade consists chiefly in the export of whisky and potatoes. *Oban*, a small seaport town on a fine bay, near the south-east end of Loch Linnhe, is a place of modern origin, and owes its importance to its being one of the most convenient stations for trade on the west coast. *Tobermory* (Mary's well), a seaport town in Mull, at the north-west end of the Sound, was founded in 1788, by the British Society for the Encouragement of Fisheries, and consists of about 100 houses. Its harbour is formed by a capacious bay, protected by an island which lies across its mouth. *Staffa*, a small island on the west coast of Mull, is celebrated for its magnificent basaltic columns and curious caverns; particularly that called Fingal's Cave, which forms a sort of large hall, supported by gigantic columns, and paved by the sea. *Iona*, or *I-kolm-kill* (the island of St. Columb's cell, or church) lies at the south-western point of Mull, from which it is separated by a narrow strait. A monastery was founded here by St. Columba, the apostle of the Highlands, in the seventh century; which gradually acquired a great reputation for sanctity and learning. It became the seat of the Bishop of the Isles, and the ruins of the cathedral still attest its ancient importance. It is said to contain the remains, if not still the tombs, of forty-eight Scottish, four Irish, one French, and eight Norwegian kings; besides those of Lords of the Isles, and other distinguished personages.

§ 3. *Ayrshire.*

Ayr, the county town, is situate at the mouth of the river Ayr, 76 miles W.S.W. of Edinburgh, and 34 S.S.W. of Glasgow. It is of considerable size, and well built; but owes its importance chiefly to its being the county town. It now forms a parliamentary district, along with *Newton* on the opposite side of the river. *Kilmarnock*, 12 miles N.N.E. of Ayr, is a place of some antiquity, but has only of late acquired a respectable appearance, with many handsome houses and public buildings. It is the chief manufacturing town in the county, the principal productions being woollen cloths, carpets, blankets, serges, tartans, cottons, gloves, bonnets, caps, muslins, leather, saddlery, shoes, and a variety of other useful articles. *Irvine*, at the mouth of the rivers Irvine and Garnock, is a considerable seaport, chiefly inhabited by mariners. It exports a very large quantity of coals to Ireland and elsewhere, and imports considerable quantities of iron, timber, hemp, and grain. *Maybole*, a considerable town, 12 miles S.E. of Ayr, is noted for the manufacture of blankets. *Girvan*, a seaport town in Carrick, twenty-one miles S.W. of Ayr, with a commodious harbour, is well built, and chiefly inhabited by people engaged in the cotton manufacture. *Largs* and *Fairlie*, two villages on the north-west coast, are much frequented as bathing places. Largs is celebrated for the defeat of Haco, king of Norway, by king Alexander III. in 1263. *Ardrossan* is a populous thriving village, of modern erection. A pier of 900 feet in length has been constructed, which will form a spacious and secure harbour for vessels of every burden, and approachable in any state of the wind. A proposal was made to connect it with Glasgow by a canal; but that project has failed, and a railway has been substituted between Ardrossan and Johnston. Ardrossan is also a favourite sea-bathing place. *Troon Bay*, seven miles north of Ayr, is a fine natural harbour, lately improved at the expense of the Duke of Portland, the proprietor, by the construction of a pier, which makes the depth of water nineteen feet at the lowest ebb. It is connected with Kilmarnock by a railway. Between Ayr and Maybole, where the road crosses the river Doon, are the ruins of "Alloway's auld haunted kirk;" where a fine monument has been erected to the memory of Burns.

§ 4. *Banffshire.*

Banff, the county town, is situate at the mouth of the Deveron, on the west bank of the river, 165 miles north-east of Edinburgh, 45 north-west of Aberdeen, and 80 east of Inverness. The town is built in the old style, but remarkably clean and neat. The river is crossed by a bridge of seven arches, which leads to *Macdufftown*, a modern town and harbour, possessing considerable trade. Close by Banff is *Duff House*, the elegant mansion of the Earl of Fife; and at *Fochabers*, a small town on the east bank of the Spey, is *Gordon Castle*, the magnificent residence of the Dukes of Gordon, a noble family, now extinct, but represented by the Duke of Richmond and Lennox.

§ 5. *Berwickshire.*

Greenlaw, the county town, 36 miles E.S.E. of Edinburgh, is a small place, but contains an elegant county-hall and a large inn, both erected at the expense of the late Sir William Purves of Marchmont, the superior, and a small county jail. *Dunse*, eight miles N.E. of Greenlaw, is a large, thriving, well-built town; but chiefly remarkable for its vicinity to *Dunse Castle* and *Dunse-law*, places of some celebrity in Scottish history. It claims also the honour of having been the birth-place of John Duns Scotus, the irrefragable doctor of the middle ages. *Coldstream*, on the Tweed, 15 miles above Berwick, is a considerable town, with a fine bridge, facing which a pillar has recently been erected to the memory of Charles Marjoribanks, Esq., the first representative of the county in the reformed Parliament. General Monk, when on his way to England to restore Charles II. raised here a regiment, which has been perpetuated under the name of the Coldstream Guards. Close by the town is *Lees*, the seat of Sir John Marjoribanks; and the *Hirsel*, the residence of the Earl of Home, and the only remains of the once wide-spread possessions of that ancient family, who were the princes of Berwickshire in the middle ages. *Lauder*, an ancient royal burgh, at the head of Lauderdale, is a large village, without trade or manufacture. Its *Castle* is the patrimonial mansion of the Earl of Lauderdale. In the same district, on the east bank of the Leader, is *Earlston*, a small town, noted in modern times for the manufacture of ginghams, and in ancient times, under its proper name of *Ercildune*, as the residence of Thomas the Rymer, a gifted seer, who lived in the thirteenth century, and is reputed to have foretold many remarkable events.* In the eastern part of the county are *Ayton*, a small modern town, the first stage from Berwick on the great road; *Chirnside*, a large village, the seat of a Presbytery; and *Eyemouth*, a small seaport town, which possesses some trade, principally in exporting the agricultural produce of the county. In the south-western corner of the county, and close to the Tweed, are the ruins of *Dryburgh Abbey*, the burial-place of Sir Walter Scott.

§ 6. *Buteshire.*

Buteshire is composed of the islands of Bute, Arran, and Cumbraes. The county town is *Rothsay*, on the north side of Bute, a pleasantly situate and well-built town, celebrated for the mildness of its climate, on which account it is the great resort of valetudinarians, and people for sea-bathing. It contains an ancient castle, the residence of King Robert III. during the latter years of his reign. He created his eldest son Duke of Rothsay, in 1399, and the eldest sons of the kings of Scotland, and latterly of Great Britain, have ever since borne that title. *Brodick Castle*, on the east coast of Arran, is the baronial mansion of the Duke of Hamilton, as Earl of Arran.

§ 7. *Caithness-shire.*

Thurso, a sea-port town, pleasantly situate at the head of a spacious bay, on the north coast, 279 miles N. by W. of Edinburgh, with a good harbour. *Thurso Castle* was the patrimonial mansion of Sir John Sinclair, the editor of the first great "Statistical Account of Scotland." *Wick*, on the east coast, with its suburb of *Pulteneytown*, form together a thriving sea-port, the chief seat of the herring-fishery on this coast. It is also the seat of the sheriff-courts, and contains the county jail. In the north-eastern corner of the shire is the site of a celebrated spot called *Johnny Groats' house.*

§ 8. *Clackmannanshire.*

Alloa, the principal town, is situate on the north bank of the Firth of Forth, at the point where it may be said to terminate. It is a considerable town, with an increasing trade, chiefly in the exportation of coals. *Alloa Tower*, an ancient castle,

* *Vide* "Sir Tristrem, a metrical romance of the thirteenth century," edited by Sir W. Scott.

formerly the baronial mansion of the Earl of Mar, is close on the town. *Clackmannan* is a village, with a tower, north-east of Alloa. *Dollar* is the place appointed by the Parliamentary Reform Act for the election of the representative of the two shires of Kinross and Clackmannan; and has risen into some repute for its academy, founded with funds bequeathed to the parish by a person of the name of Macnab, of which the minister of the parish is principal. The shires of Clackmannan and Kinross, with the parishes of Muckhart, Fossaway, Logie, Culross, and Tulliallan, in Perthshire, and Alva, an isolated parish of Stirlingshire, now form one district for the election of a Parliamentary representative.

§ 9. *Dumbartonshire.*

Dumbartonshire, anciently called *Levenex* or *Lennox*. — This county consists of two portions; the larger of which is nearly enclosed by the counties of Argyle, Stirling and Renfrew; and the smaller, which is separated from the other by an intervening distance of six miles, lies between Lanarkshire and Stirlingshire. *Dumbarton*, formerly *Dunbritton*, is a small town at the mouth of the Leven, the outlet of Loch Lomond, and is chiefly remarkable for its castle, which stands on a peninsular hill in the Clyde, and was once considered to be a place of great strength and importance. It was, under the name of *Alcluydd*, the capital of the Cumbrian kingdom of Strathclyde, and is one of the most ancient towns in Scotland. *Helensburgh*, a pleasant sea-bathing village on the Clyde, opposite Greenock, at the mouth of the Gare Loch, (Short lake) which, with Loch Long, forms *Roseneath* (the Maiden's peninsula,) where there is an elegant modern mansion-house of the Duke of Argyle. *Kirkintilloch*, seven miles E.N.E of Glasgow, is a considerable town, chiefly inhabited by weavers, who are employed by the manufacturers of Glasgow. *Bonhill*, in the vale of Leven, near Dumbarton, was the birth-place of Smollet, whose name is commemorated by a pillar erected there.

§ 10. *Dumfries-shire.*

Dumfries, the county town, and the capital of the south of Scotland, occupies a beautiful situation on the east bank of the Nith, about nine miles from the Solway Firth, 71 miles S. by W. of Edinburgh, and 79 S.S.E. of Glasgow. It is a thriving town, boasting of all the elegancies and attractions of a minor capital, and the constant residence of a number of genteel families, who form among themselves a very respectable society. It also boasts, in a commercial point of view, considerable importance as a market-town. Its great attraction, however, to strangers, is the tomb of Burns, in St. Michael's church-yard, a somewhat elegant structure of red-coloured marble, and containing a statue of the poet by Flaxman. His mortal remains are deposited in a vault below. An extensive Lunatic Asylum has been lately erected and endowed by the trustees of James Crichton, Esq. of Friar's Carse. *Glencaple*, near the mouth of the river Nith, serves in some respect as the port of Dumfries. *Annan*, a flourishing seaport town at the mouth of the Annan, 16 miles east of Dumfries. *Gretna Green*, on the English border, has been long famous for the irregular marriages contracted there by parties from England, where the law of marriage is too strict and formal to suit a hasty purpose. Luckily for such parties, the law of Scotland upon this subject is so loose as to require no special ceremony or form of marriage, while it allows it to be inferred from circumstances; so that people sometimes get married, and remain for years in that happy state, without knowing it, till it is proved against them. *Moffat*, at the head of Annandale, 21 miles N.W. of Dumfries, and 52 S. from Edinburgh, is a neat village, much frequented by invalids for the benefit of its mineral waters. These are obtained from three springs in the neighbourhood, one of which is sulphureous, and the other two chalybeate. *Lochmaben*, a paltry and decayed royal burgh, in Annandale, in the neighbourhood of four lochs, or small lakes, upon a peninsula, in one of which are the ruins of a castle erected by King Robert Bruce. *Sanquhar*, a royal burgh, in the upper part of Nithsdale, is principally inhabited by colliers, and contains the remains of an ancient castle. *Thornhill*, a large village with 1100 inhabitants, on the Glasgow road, 12 miles from Dumfries.

§ 11. *Edinburghshire, or Mid Lothian.*

Leith, the port of Edinburgh, and for many centuries the property of the Metropolis, is now an independent Parliamentary burgh, though almost joined to the city on its north-east side. It consists of two distinct towns on the opposite sides of the small rivulet called the Water of Leith, which here falls into the Firth, and forms the old harbour. The port is entirely a tide-harbour, crossed by two drawbridges, with only 17 feet water at spring-tides, so that it can seldom be entered by

large deep-laden ships. Great exertions have been made, and large sums of money have been expended, in the vain attempt to remedy this evil. The Corporation of Edinburgh have also constructed two spacious wet-docks for the ordinary shipping trade of Leith, but owing to the small size of their entrance locks, they are inaccessible to the steam-ships, which now carry on the coasting trade. Leith enjoys, however, a very considerable foreign trade, principally with the Baltic, Portugal, and North America; its merchants have also entered with great spirit into the newly opened China trade, and have regular communications with Australia. The streets in the older part of the town are very narrow, mean, and dirty; but several spacious streets, and many good houses have been built in the outskirts. On the south-east side of the town, the links form an extensive field for the recreation and amusement of the inhabitants. Leith having been, from its origin till 1838, only a dependent suburb of Edinburgh, contains few public buildings worthy of notice; the principal are the Custom-house at the harbour, the Exchange-buildings and Assembly-rooms in Constitution Street, the Leith Bank in Bernard Street, the Trinity House in the Kirkgate, and North Leith Church. One mile west of Leith is *Newhaven*, the station of the ferry-boats between Mid-Lothian and Fife; and about a mile further west is *Granton*, where the Duke of Buccleuch is erecting a pier which will be accessible for large ships at any time of the tide. *Dalkeith*, 6 miles S.W. of Edinburgh, a large town on the ridge of a peninsula formed by the rivers North Esk and South Esk, which meet a little below the town, is celebrated for its grain-market, one of the largest in Scotland, which is held every Thursday, and also for its meal-market on Monday, which is inferior in importance only to the other. Close by the east end of the town is *Dalkeith Palace*, an old mansion, which used to be the principal residence of the Dukes of Buccleuch. *Musselburgh*, *Fisherrow*, *Newbigging*, and *Inveresk*, are contiguous towns and villages at the mouth of the Esk, containing altogether, by the census of 1831, 8,961 inhabitants. *Portobello*, a fashionable bathing-place, and the resort of the people of Edinburgh in summer, has increased to a large scattered town, containing some good houses, and above 2000 constant inhabitants. *Cramond*, at the mouth of the Almond, 4 miles N.W. of Edinburgh, is a small village, only remarkable as having been a Roman station, under the name of Alaterva. *Midcalder*, 12 miles west of Edinburgh, a considerable village, is one of the circuit towns of the county courts. On the North Esk, above Dalkeith, and 7 miles S. by W. of Edinburgh, are the ruins of *Roslin Castle*, and its Chapel, one of the finest and most perfect specimens of the florid gothic style of architecture in Scotland. On the South Esk, are *Newbattle Abbey* and *Dalhousie Castle*, two ancient baronial mansions; and, between 6 and 8 miles S.W. of Dalkeith, are the remains of two princely castles, *Crichton*,* and *Borthwick*, both erected in the middle of the 15th century, by the Lords Crichton and Borthwick.

§ 12. *Elginshire.*

Elgin, the county town, is situate on the right bank of the Lossie, five miles from the Moray Firth, 190 miles N. of Edinburgh, 63½ N.W. of Aberdeen, and 40 E.N.E. of Inverness. It consists of one main street, about a mile in length, with many cross thoroughfares. The houses are built in a very handsome style, and the town has been of late years very much improved. Elgin cathedral, the see of the Bishop of Moray, was one of the finest gothic churches in Scotland, but is in ruins, though still exhibiting proofs of its former splendour. *Forres*, 12 miles W. by S. of Elgin, is a neat clean town, built on a rising ground, three miles from the mouth of the Findhorn. At the east end of the town is an ancient standing stone, with rude sculptures, supposed to commemorate a peace concluded here between Malcolm II. and Sweno, a Danish invader, about the beginning of the eleventh century. *Burghead*, a promontory, seven miles N.W. of Elgin, exhibits remains of fortifications, supposed by some to be Danish, by others Roman, and which are probably both.

§ 13. *Fifeshire.*

Fife is an extensive peninsula, between the firths of Forth and Tay, generally hilly and rugged in the interior, but containing many fertile valleys. In former times, the interior was so rugged and uncultivated, while the coasts were crowded with towns, and in a state of cultivation, that King James VI. used to compare his "kingdom of Fife," as it is still popularly called, to a grey garment with a golden fringe. The interior, however, is now opened up by good roads, and cultivation has been extended very generally over the peninsula. In the latter part of the seventeenth century

* *Vide* Marmion by Sir W. Scott.

Fife contained so many as 19 royal burghs, some of which carried on a considerable foreign trade, viz. *Cupar*, *St. Andrew's*, *Crail*, *Kilrenny*, *Easter Anstruther*, *Wester Anstruther*, *Pittenweem*, *Ely*, *Earlsferry*, *Dysart*, *Kirkaldy*, *Kinghorn*, *Burntisland*, *Inverkeithing*, *Dunfermline*, *Newburgh*, *Strathmiglo*, *Auchtermuchty*, and *Falkland*; but most of them have fallen very much into decay. *Cupar*, the capital of the county, is a small but very neat town on the Eden, 30 miles N.E. of Edinburgh. *St. Andrew's*, a very ancient and venerable city, is situate on the sea-shore, 10 miles east of Cupar. It was for centuries the residence of a bishop, and latterly of an archbishop, who was the primate of Scotland, and possessed a magnificent cathedral, which was destroyed in a single day by the followers of John Knox, in June 1559. Only a small part of the ruins now remain to attest its ancient grandeur. St. Andrew's is the seat of the oldest of the Scottish Universities, which was originally founded in 1411, and still possesses two colleges; in the one of which (that of St. Salvator and St. Leonard's) all the branches of a liberal education are taught, while the other (St. Mary's) is exclusively a divinity school. The town is still large, and the streets well built; but it has very little trade, and depends chiefly upon the students and families who reside there for the purposes of education. *Kirkaldy*, with its suburbs, forming a straggling range of houses along the shore of the Firth of Forth, popularly called "The lang town," is a flourishing place, and carries on a considerable trade, notwithstanding the disadvantages of a miserably bad harbour, formed upon a broad sand-bank, which is dry at low-water. *Dunfermline*, 15 miles N.W. of Edinburgh, is a place of great historical celebrity, and noted in modern times for its linen-manufactures. The town is large, well built, and handsome. The church is a new gothic structure, attached with little taste to the east end of the nave of the old abbey church, an edifice of historical celebrity, which was often destroyed and rebuilt. The remains of King Robert Bruce were discovered during the process of digging for the foundations of the new erection in 1818, and have been replaced in the church, under the pulpit. Near the church are the almost obliterated remains of a castle, inhabited by King Malcolm Canmore, and his sainted queen, Margaret, and a palace where King Charles I. was born, before his father's accession to the throne of England. *Falkland*, 10 miles S.W. of Cupar, contains a portion of an ancient palace, which was the favourite residence of several kings of the Stuart dynasty.

§ 14. *Forfarshire.*

Forfar, the county town, 56 miles north of Edinburgh, occupies a pleasant situation at the lowest point of a country which declines towards it on all sides. *Dundee*, on the northern shore of the Firth of Tay, about 12 miles from its mouth, has risen up, within the last 25 years, into a place of great commercial importance. In the town and neighbourhood, the manufacture of linen and hempen goods is carried on to a great extent; and these form the staple article of its trade with Russia, America, and other foreign countries. The town has been in consequence very much extended and improved, and excellent docks have been constructed for the accommodation of its shipping. *Montrose*, a flourishing town at the mouth of the South Esk, which here expands into a large basin, on the west side of the town, has a deep harbour which may be entered at any time of the tide, but is not equally accessible in every wind. *Arbroath* is also a flourishing town, and is connected with Dundee by a railway 16½ miles long. *Brechin*, an ancient episcopal city, with an old cathedral and a castle, the residence of Lord Panmure, who is the principal landholder of the county. Attached to the cathedral is a singular round tower, like those of Ireland, and of which there is only one other in Scotland, at Abernethy, in Perthshire. *Kirrymuir*, a large manufacturing village, N.W. of Forfar.

§ 15. *Haddingtonshire, or East Lothian.*

Haddington, the county town, 17 miles E. of Edinburgh, is neat and well built. *Dunbar*, on the sea coast, 11 miles from Haddington, is a large but somewhat decayed town, with a harbour cut in the rock. It contains the vestiges, rather than the remains, of the ancient castle of the Earls of March, which was considered to be one of the keys of Scotland. Dunbar is celebrated in history for the defeat of the Scots, under their king John Baliol, by Edward I. of England, in 1296; for a second defeat of the Scots by Cromwell, in 1650, and for many other historical events. It possesses a considerable trade in corn, and is a place of great resort for the boats engaged in the herring-fishery. *North-Berwick*, *Tranent*, and *Prestonpans*, are rather villages than towns. To the north-east of the two latter was fought the battle of Prestonpans in 1745.

§ 16. *Inverness-shire.*

Inverness, the county town, and the reputed capital of the Highlands, is pleasantly situate at the mouth of the river Ness, near the Beauly Firth, 155 miles N. by W. of Edinburgh. It is a large well-built town, and contains several extensive and commodious public buildings. *Fort-George* is a regular fortress, with six bastions, built on a sandy tongue of land at the entrance of the Beauly Firth. It was built for the purpose of overawing the Highlands, but is now so little necessary in this respect, that it has been proposed to convert it into a depot for criminals. *Fort-Augustus*, at the south end of Loch Ness, and *Fort-William*, on Loch Eil, were built for the same purpose, but are now equally useless with Fort-George. Between Fort-George and Inverness is *Culloden Muir*, where the battle that extinguished the rebellion was fought, in 1746. *Portree* (King's Harbour), on the north-east coast of Skye, is a small but thriving town, with a capacious harbour, well situated for trade, and for the prosecution of the fisheries.

§ 17. *Kincardineshire.*

Stonehaven and *Bervie* are two small towns on the sea-coast. Near the former are the extensive ruins of *Dunnottar Castle*, once the residence of the Earls-Marischal of Scotland.

§ 18. *Kinross-shire.*

Kinross, a small town, near the west side of Lochleven, contains a county hall, and good inns for the accommodation of travellers on the great north road. Upon an island in the lake is an ancient castle, sometime occupied as the prison of Queen Mary, in 1568. (See *Clackmannan.*)

§ 19. *Kirkcudbrightshire.*

Kirkcudbright, the county town of the same name, situate upon the estuary of the Dee, 98 miles S. by W. of Edinburgh, is neatly and regularly built, with a handsome court-house and spacious jail. In the estuary is *St. Mary's Isle*, containing the mansion-house of the Earl of Selkirk. *Maxwelltown*, on the west bank of the river Nith, is a suburb of Dumfries, and now included in the Parliamentary limits of that town.

§ 20. *Lanarkshire.*

Lanark, the county town, is a small place near the Clyde, 32 miles S.W. by S. of Edinburgh, and 24 S.E. by S. of Glasgow. *Biggar*, a small town, 12 miles E. of Lanark. *Hamilton*, on the Clyde, 20 miles S.E. of Glasgow, is a considerable town, but is chiefly remarkable for its *palace*, the princely residence of the Duke of Hamilton; in whose park of Cadyow, are a few remaining specimens, though believed not to be pure, of the ancient Caledonian breed of cattle. *Airdrie*, 11 miles east of Glasgow, is a large, straggling, but thriving town, with many excellent houses, and considerable trade; and surrounded with collieries and iron-works.

§ 21. *Linlithgowshire, or West Lothian.*

Linlithgow, the county town, sixteen miles W. of Edinburgh, is a small town, still retaining an appearance of antiquity, with the ruins of a magnificent palace of the kings of Scotland, which overhangs the *lin*, or lake, whence the town takes its name. *Queensferry*, nine miles W. by N. of Edinburgh, is a small seaport town at the narrowest part of the Firth of Forth; and is so called from its being the place where St. Margaret, the queen of Malcolm III., used to pass the firth, in her frequent journeys between Edinburgh Castle and Dunfermline. On a high bank, $2\frac{1}{2}$ miles west of the ferry, is *Hopetoun-house*, the splendid mansion of the Earl of Hopetoun; and a little to the east of the burgh, is *Dalmeny Park*, the beautiful residence of the Earl of Rosebery. *Borrowstown-ness*, usually contracted to *Bo'ness*, is a seaport town, with some trade, on the Forth. *Bathgate*, five miles S. of Linlithgow, is a thriving town of considerable size; with two important cattle fairs yearly, and a weekly market. *Blackness Castle*, an antiquated edifice projecting into the firth, is one of the four castles kept in repair, in terms of the articles of union with England; but, like the others, it is now useless, and is garrisoned only by an old artillery serjeant.

§ 22. *Nairnshire.*

Nairn, a small seaport town at the mouth of the river Nairn, where it has a harbour, which was destroyed by the Moray flood in 1829, but since reconstructed.

§ 23. *Orkney and Shetland.*

Kirkwall, the county town, is situate at the bottom of a deep bay, on the northern

coast of Pomona, or the mainland of Orkney. The old town is a place of high antiquity, with narrow, irregular, dirty streets; but the new town forms a handsome street, nearly a mile long, with a neat garden attached to each house. The ancient cathedral of the bishopric of Orkney, a large and massy gothic structure, in the usual form of a cross, is still entire. It was founded before the middle of the twelfth century by Ronald Earl of Orkney, in honour of his uncle St. Magnus. *Stromness*, in the south-western part of the same island, has an excellent harbour, with a bay which forms one of the most secure havens in the north of Scotland, and affords safe anchorage for vessels above 1000 tons burden. Very near the town are the *Stones of Stennis*, a curious Druidical monument, consisting, as usual, of a number of large upright stones. *Lerwick*, on the east side of the mainland of Shetland, is a small but thriving town, with a spacious harbour formed opposite the town by the island of Bressay. *Scalloway*, which was till very recently the legal capital of Shetland, is merely a castle on the opposite side of the island.

§ 24. *Peebles-shire.*

Peebles, the county town, is pleasantly situate on the Tweed, 22 miles south of Edinburgh. Six miles eastward is *Inverleithen*, a thriving village, with a mineral spring, the St. Ronan's Well of Sir Walter Scott.

§ 25. *Perthshire.*

Perth, anciently called *St. Johnstown*, the capital of the county, is a place of great antiquity, and occupies a delightful situation on the west bank of the Tay, 32 miles from the sea, and 40 miles N. by W. of Edinburgh. Some parts of the town are compactly built, and it contains several new, spacious, and handsome streets; a large county hall, in the Grecian style of architecture, by Smirke; an elegant bridge across the Tay, and several other useful as well as ornamental buildings. The manufacture of cotton goods, leather, and gloves, is carried on to some extent. About one mile above, on the opposite side of the river, is *Scone Palace*, the residence of the Earl of Mansfield, lately built upon the site, and including a portion, of the old palace of the kings of Scotland, who used to be crowned in the abbey of Scone. *Dunkeld*, a small town in the Highlands, 15 miles N. from Perth, with a fine bridge over the Tay, and the ruins of a cathedral. Adjoining to it is *Dunkeld House*, the principal mansion of the Duke of Athol. *Dumblane*, five miles north of Stirling, is a small but ancient town, formerly a bishop's see, and now the residence of one of the substitute sheriffs of the county. It has a mineral well, and its cathedral has been lately repaired, and partly converted into an elegant parish church. To the eastward of Dumblane is *Doune*, a small town, noted for an ancient castle and well frequented cattle markets. Near it, on the banks of the Teith, about eight miles N.W. of Stirling, are the great cotton works of *Deanston*, which give employment to about 1000 persons. *Crieff*, a thriving town, delightfully situate on a gentle slope rising from the river Earn, 20 miles W. of Perth, has a considerable trade in the weaving of thin linens and cottons. *Comrie* is a neat respectable-looking village, in a thriving condition, pleasantly situate on the north bank of the Earn, 6½ miles west of Crieff. *Abernethy*, one of the ancient capitals of the kingdom of the Picts, is situate near the mouth of the Earn, seven miles from Perth; but now consists chiefly of thatched houses, forming an irregular and dirty town. In the churchyard is a singular round tower, about 75 feet high, and 16 in diameter, built in solid hewn stone; but the origin and the purpose of the structure are alike unknown. The only other building of the kind in Scotland, is one attached to Brechin cathedral. *Culross*, a small town on the north shore of the Firth of Forth, above Queensferry, contains the remains of an ancient abbey; and a few miles west is the small town of *Kincardine*.

§ 26. *Renfrewshire.*

The county town, of the same name, is a small place near the Clyde, nine miles west of Glasgow. The real capital of the county is *Paisley*, seven miles S.W. of Glasgow, on the river Cart. It consists of the old town, on the west bank of the river, and the new town on the east, which are united by three handsome stone bridges. Both parts of the town now retain a number of handsome streets, regularly arranged; with a commodious town-house; the county gaol and bridewell; and an ancient abbey church, in which is the tomb of Margery, the daughter of King Robert Bruce, through whom the crown of Scotland descended to the family of the Steward. Paisley has been long noted for the manufacture of silk and cotton fancy goods. Since 1816 the manufacture of silk goods, fancy muslins, and cottons, have been carried on to a great extent; and the manufacture of shawls, both of silk and of cotton, is also prosecuted with great

success; as well as that of shawls, plaids, and scarfs, from silk mixed with merino wool. There are besides distilleries, tape manufactories, calico printing works, copperas works, bleachfields, &c. Vessels of 60 tons can come up to the town, partly by the river, and partly by a canal from the Clyde. *Greenock*, 22 miles west of Glasgow, a large seaport town on the Clyde, with an excellent harbour and docks, capable of receiving 500 sail of ships. The maritime commerce of Greenock is very extensive; and shipbuilding, the manufacture of machinery, and of cotton goods, are carried on here to a considerable extent. *Port-Glasgow*, 19 miles west of Glasgow, is a thriving town, with a good harbour and docks. It possesses extensive ropeworks, with a canvas manufactory, sugar refineries, and shipbuilding yards. *Gourock*, a sea-bathing town, west of Greenock, on a fine bay of the Clyde. At the point west of Gourock, where the firth opens to the south, is the *Cloch* lighthouse.

§ 27. *Ross and Cromarty.*

Tain, the county town of Ross, an ancient burgh, recently improved by the addition of many handsome houses, is situate near the southern shore of the Dornoch Firth, 200 miles N. by W. of Edinburgh. *Dingwall*, a well-built town, with an elegant church, on the river Conan, at the west end of the Cromarty Firth; and containing also the county jail. *Cromarty*, a small town at the entrance of the firth. *Stornoway*, a well-built flourishing town, with a capacious and well-frequented harbour, at the head of Loch Stornoway, on the east side of Lewis.

§ 28. *Roxburghshire.*

Jedburgh, the county town, is pleasantly situate on the Jed, 45 miles S.E. by S. of Edinburgh. It is a neat well-built town, and contains the county jail, and an ancient abbey church, founded by King David I. *Kelso*, on the Tweed, at the confluence of the Teviot, is a pleasant town, with a good corn-market, and containing the ruins of an abbey, also erected by King David. There is a fine bridge over the Tweed; and to the west of the town is *Fleurs*, the magnificent mansion of the Duke of Roxburghe. On the opposite side of the river is the site of the ancient royal burgh of *Roxburghe*; and at a little distance, on the bank of the Teviot, are the almost obliterated remains of the castle of the same name. *Melrose*, a small town between the Eildon Hills and the Tweed, contains the fine ruins of one of King David's abbey churches. The original Melrose of Saxon times is, as the name imports, a peninsula formed by the Tweed, two mile east of the modern town. *Hawick*, a thriving manufacturing town, on the Slitterick, 10 miles W.S.W. of Jedburgh. The town is pleasant and well-built, with a commodious town-house, and has considerable manufactures of carpets, inkle, cloth, leather; besides which, great quantities of wool are spun, and hosiery manufactured.

§ 29. *Selkirkshire.*

Selkirk, the county town, is a small but flourishing place on the Etterick, 36 miles S.S.E. of Edinburgh. It was long famous for the manufacture of shoes, on which account the members of the corporation were distinguished by the title of "the Sutors* of Selkirk." *Galashiels*, a town at the mouth of the Gala-water, has been long celebrated for the manufacture of coarse grey woollen cloth, as well as of worsted yarn and stockings; to which have been added of late years the manufacture of fine woollen cloths of every colour, and of good quality. On the opposite side of the Tweed, about 4¼ miles below Selkirk, is *Abbotsford*, the romantic residence of the late Sir Walter Scott; and to the S.W. of Selkirk is *Bowhill*, now one of the principal mansions of the Duke of Buccleuch.

§ 30. *Stirlingshire.*

Stirling, the capital, one of the most ancient towns in Scotland, is situate near the south bank of the Forth, 16 miles above Alloa by water, and only 6 by land, and 35 miles W. by N. of Edinburgh. The castle is built upon a rocky eminence, from which a hill slopes gradually eastward, containing the town upon its ridge and sides. It was a frequent and favourite residence of the later kings of Scotland; and though still kept in repair, is of very little use, and of no value as a fortress. The High Street of the old town is spacious, but the others are narrow and irregular. On the north side of the town several new streets have been laid out, and many houses erected; and the old part of the town has been also much improved. A considerable trade is carried on; and there are manufactures of cottons, and woollen goods, especially carpets. *St. Ninians* and *Bannockburn*, two villages in the neighbourhood, have

* *Sutors*— Shoemakers.

extensive manufactories of carpets and tartans. The latter derives its name from the *Bannockburn*, upon the banks of which was fought the famous battle which secured the independence of Scotland, in A.D. 1314. *Falkirk*, 24 miles west of Edinburgh, and 12 S. by E. of Stirling, is a large thriving town, near the junction of the Union with the Forth and Clyde Canal. It is celebrated for its great cattle markets, called the "Trysts," at which so many as 30,000 head are sometimes collected; and for two battles, one in 1298, and the other in 1745. *Grangemouth*, a thriving sea-port town at the entrance of the Great Canal. The *Carron Works* on the river Carron, two miles north of Falkirk, have been long celebrated as one of the most extensive foundries and manufactories of iron goods in Europe. The Carron Company have wharfs, and a dock for repairing their vessels, at Carron-shore, two miles below the works. In the south-western part of the county are *Buchanan-House*, the mansion of the Duke of Montrose; and *Killearn*, the birthplace of the renowned George Buchanan, where an obelisk has been erected to his memory.

§ 31. *Sutherlandshire.*

Dornoch, the county town, is a mere village, on the north side of the Firth, 210 miles N. by W. of Edinburgh. It was formerly the see of the bishops of Caithness; its ancient cathedral has been repaired by the late Duchess-Countess of Sutherland, whose husband, George, the first Duke of Sutherland, was buried here in 1833, and herself in 1839. To the northward, on the coast, is situate *Dunrobin Castle*, the ancient residence of the Earls of Sutherland; which has been recently modernized and enlarged.

§ 32. *Wigtonshire.*

Wigton, the county town, a small burgh pleasantly situate on Wigton Bay, 105 miles from Edinburgh, and 58 W. of Dumfries. *Whithorn* or *Whithern*, a small town of remote antiquity, 11 miles S. of Wigton, which formerly contained a cathedral, the see of the Bishop of Galloway, and a priory. It derives its name from a white stone church erected here by St. Ninian in the fourth century. *Stranraer*, a thriving town of considerable antiquity, situate at the southern extremity of Loch Ryan, which affords excellent anchorage, and a good harbour for shipping. *Port-Patrick*, a small town finely placed on the west coast of the Rhinns of Galloway, 133 miles from Edinburgh, 89 from Glasgow, and 21 from Donaghadee in Ireland. A fine quay and lighthouse have been erected at the public expense, to facilitate the passage to and from Ireland; but the introduction of steam-vessels has considerably diminished its importance.

PARLIAMENTARY REPRESENTATION. — By the articles of Union with England in 1707, it was provided that the peers of Scotland should have sixteen representatives in the House of Lords; and that the counties and royal burghs should send 45 members to the House of Commons of Great Britain. By the Parliamentary Reform Act in 1832, the number of the latter was increased to 53, whereof 30 are elected by the counties, and 23 by the cities and burghs. For the purposes of the act, the county of Cromarty was conjoined with Ross, and Nairn with Elgin; and the counties of Kinross and Clackmannan, with some adjoining portions of Perth and Stirling, were formed into one electoral district. All the other counties elect one member each. Most of the burghs are classed in districts, as stated in the following table, each district having only one representative elected by the aggregate constituency.

Cities & Burghs.	*Population* 1841	*Constituency in* 1839.	*No. of Repr.*
Edinburgh,	132,977	5159	2
Glasgow,	255,650	7520	2
Aberdeen,	61,932	2528	1
Dundee,	62,873	2740	1
Paisley,	47,695	1300	1
Greenock,	35,645	1100	1
Perth,	20,167	895	1
Ayr & Newton,	15,749	453	
Campbeltown,	6782	280	
Inverary,	1092	55	1
Irvine,	7313	244	
Oban,	1398	64	
Dumfries and Maxweltown,	13,088	592	
Annan,	3321	175	
Kirkcudbright,	2588	99	1
Lochmaben,	931	41	
Sanquhar,	1700	66	

Cities & Burghs.	*Popul^n.*	*Constity.*	*Repr^t.*
Elgin,	5061	249	
Banff & Macduff,	5309	203	
Cullen,	1564	30	1
Inverury,	1079	94	
Kintore,	465	35	
Peterhead,	5759	241	
Falkirk,	8203	387	
Airdrie,	12,408	275	
Hamilton,	8689	368	1
Lanark,	4467	220	
Linlithgow,	4009	83	
Haddington,	3749	187	
North Berwick,	1037	33	
Dunbar,	2978	131	1
Jedburgh,	3277	201	
Lauder,	1148	54	
Inverness,	11,568	475	
Forres,	3173	155	1
Fortrose,	955	55	
Nairn,	2384	72	

Cities & Burghs.	Population 1841.	Constituency in 1839.	No. of Repts.
Kilmarnock,	19,398	630	
Dumbarton,	4391	170	
Port-Glasgow,	5943	206	1
Renfrew,	2012	91	
Rutherglen,	5623	161	
Kirkaldy,	9778	427	
Burntisland,	1859	53	1
Dysart,	7057	130	
Kinghorn,	1542	41	
Leith,	25,984	1272	
Musselburgh,	6116	238	1
Portobello	3588	232	
St. Andrews,	4499	281	
E. Anstruther,	1018	59	
W. Anstruther,	339	12	
Crail,	1221	54	1
Cupar	5137	333	
Kilrenny,	1719	48	
Pittenweem,	1309	48	

Cities & Burghs.	Populn.	Constity.	Repts
Montrose,	14,252	387	
Arbroath,	14,568	469	
Brechin,	5903	232	1
Forfar,	7981	279	
Bervie,	864	40	
Stirling,	10,701	471	
Culross,	587	22	
Dunfermline,	13,296	545	1
Inverkeithing,	1827	56	
Queensferry,	1233	42	
Wick,	5522	254	
Cromarty,	1936	49	
Dingwall,	1732	87	1
Dornoch,	448	23	
Tain,	1872	86	
Kirkwall,	3046	145	
Wigton	1860	108	
New Galloway,	430	17	1
Stranraer,	4878	220	
Whithorn,	1513	50	

Some of the principal towns only share in the representation of the counties to which they belong; as Dalkeith, population in 1841, 5830. *Mid-Lothian;* Dunse, 3162, *Berwickshire;* Kelso, 5328, *Roxburghshire;* Selkirk, 3484, *Selkirkshire;* Peebles 2632, *Peebles-shire;* Maybole, 7027, *Ayrshire;* Bathgate, 3928, *Linlithgowshire;* Tranent, 3887, *Haddingtonshire;* Alloa, 7921, *Clackmannanshire;* Dumblane, 3361, *Perthshire;* Crieff, 4333, *Perthshire;* Comrie, 2471, *Perthshire;* Cupar-Angus, 2745, *Perthshire;* Rothesay, 7147, *Buteshire.*

§ 3. *Ireland.*

ASTRONOMICAL POSITION. — Between 51° 26′ and 55° 20′ N. latitude; and 5° 28′ and 10° 28′ west longitude.

DIMENSIONS. — Ireland is situate to the west of Great Britain, from which it is separated by the Irish Sea and St. George's Channel. It is of a rhomboidal form, having its longer side nearly in the direction of the meridian, and its shorter from north-east to south-west. In the direction of its *greatest diagonal*, from Browhead in Cork to Fairhead in Antrim, it measures 306 miles; its *extreme length* from Browhead to Malin-head in Donegal, is 290 miles; and its greatest length on a meridian, 235 miles. Its *greatest breadth*, from the extremity of the Mullet peninsula in Mayo to the mouth of Lough Strangford in Down, is 182 miles, but from Galway Bay to Dublin Bay, the narrowest part, it is only 110. The island contains an area of 32,035 square miles, or 20,499,550 imperial acres; whereof 14,603,415 acres are cultivated, or capable of cultivation, the remainder consists of mountains, bogs, and lakes.

BOUNDARIES.—*Northern*, *Western*, and *Southern*, the Atlantic Ocean; *Eastern*, St. George's Channel, the Irish Sea, and the North Channel, by which it is separated from Great Britain. The shortest distance between the two islands is from Fairhead in Antrim to the Mull of Cantire in Argyllshire, which is 12 miles; from Port-Patrick in Galloway to the nearest point of Antrim, is 22 miles; from Holyhead in Anglesea to Howth-head in Dublin, is 60 miles; and from Carnsore Point in Wexford to St. David's Head in South Wales, about 50 miles. The Irish Sea, in its greatest width, expands to 130 miles.

GENERAL ASPECT. — The surface of Ireland though, generally speaking, flat, is not quite level, but rises frequently into low hills. On the east coast the mountains of Mourne in Down, and those of Wicklow, attain a considerable elevation; but, with these exceptions, the mountainous districts are found in the west, particularly in Kerry, Clare, Galway, Mayo, Sligo, and Donegal. None of its mountains, however, are so high as to retain the snow during any considerable period of the year. Ireland contains no fens, and few of what are called dales in England; but it presents, nevertheless, very extensive level tracts; particularly in the centre, where a vast plain, comprising nearly a third part of the area of the island, extends across its whole breadth, from the sea at Dublin to Galway Bay, and rises in the hill of Moat-a-gre-

nogue in Westmeath, its most elevated point, to the height of 322 feet above the level of the sea.

One of the principal characteristics in the general aspect of Ireland is the extent of *bog* by which it is disfigured. These bogs are found chiefly in the higher parts of the central district, and may be nearly all included between two lines drawn across the island, the one from Howth-head to Sligo, the other from Wicklow to Galway, the largest portion lying west of the Shannon, in the counties of Galway, Roscommon, and Mayo. The total quantity of bog land, (exclusive of some small mountainous and other detached patches) has been estimated at 2,831,000 acres; whereof 1,576,000 are flat red bog, capable of being reclaimed, and 1,255,000 are mountain bog, mostly convertible into pasture land. The bogs are distinguished, according to the substance of which they are composed, into red or fibrous, and black or compact. The former, which consists chiefly of bog moss, is the most prevalent. Its colour is a reddish brown, approaching, when dry, to olive, and its surface is generally covered with heath, which gives to it a still darker hue. The black bog varies in colour from dark brown to coal black; and, in the latter case, it is extremely hard and close-grained, separating, when broken, into angular fragments. On cutting downwards, the substance of the bog becomes denser and darker, exhibiting a black compact mass, strongly resembling pitch or coal, and when burned, it emits a smell so offensive as to prevent its general use for fuel. The peat is found to rest on a blue clay, with a substratum of limestone gravel. The depth in some places is 40 feet, but 25 feet may be considered as the general average. In all cases the bogs are above the level of the sea; and their situation invariably affords easy means of communication with some river by which their superfluous waters might be carried off, where draining is requisite for bringing them under cultivation. It is calculated that an expense of £1 : 5s. an acre, would be sufficient for the drainage. The largest of these bogs is that of *Allen* in King's County, Kildare, Roscommon, and Meath, which, though flat, has a mean elevation of 250 feet above the level of the sea, and sends forth rivers in opposite directions.

The outline of the coast, including that of the estuaries of the great rivers, to the boundary of the tide, is estimated to measure upwards of 2200 miles. This extended line contains a great number of fine harbours and roadsteads, chiefly on the north, south, and west coasts, which, being exposed to the full force of the Atlantic, are, as might be expected, indented by deep bays, protected by jutting promontories. These promontories are most numerous on the south-west coast, which lies in the direction of the prevailing winds. The east coast, on the contrary, has but one deep inlet or lough, with sufficient depth of water for every size of ships. The coast to the south of Dublin affords no shelter for large ships; and is besides rendered dangerous by the shoals which extend along it, near the land. But with this exception, the coasts of Ireland contain numerous harbours and inlets for the reception of smaller vessels; upwards of seventy well suited for the general purposes of commerce; and fourteen capable of accommodating large naval armaments. The islands near the shore are reckoned at several hundreds, but few of them are large.

GULFS, BAYS, AND STRAITS.—The *Estuary of the Shannon*, is one of the largest and safest retreats for shipping on the Irish coast. It extends 70 miles in a south-west direction from Limerick, where the tide meets the river, and gradually expands till it unites with the Atlantic, between Kerry-head and Loop-head, which are eleven miles asunder Both Loop-head and Kerry-head are bold and prominent; and a light-house has been erected on the former. Within the estuary, which is easy of access, there is ample and excellent accommodation for the largest fleets; and it may be navigated with no serious difficulty from the sea to Limerick by ships of 400 tons, though, for 15 miles below that city, the channel is in many places narrow and obstructed by rocks. *Ballyheigh Bay* and *Tralee Bay*, both to the south of Kerry-head, are very dangerous, and sometimes mistaken for the Shannon. *Dingle Bay*, a large arm of the sea, opening between Dunmore-head and Valentia island, which has an excellent roadstead, called *Valentia Harbour*, decidedly the best on the coast of Kerry. *Kenmare River*, a great arm of the sea, with deep water and clean ground in almost every part of it. *Bantry Bay*, one of the finest and most capacious harbours in Europe, being nearly 30 miles in length, with a breadth varying from four to six. Bear Island forms a sort of natural breakwater, protecting the bay from the southwest winds, and the strait which separates it from the mainland affords a safe retreat for the largest vessels. *Dunmanus Bay*, separated from that of Bantry by a narrow peninsula, extends 15 miles inland, is easy of entrance, has deep water, and good anchorage ground in nearly every part of it. *Crookhaven*, a small harbour east of Mizen-head, is an admirable port, of moderate size, with easy access, secure anchorage, and three fathoms water at ebb tide. *Kinsale Harbour*, a safe and excellent port, formed by the estuary of the Bandon, at the mouth of which is a bar with 12 feet water at ebb tide; but within the bar there is good anchorage, with four to five fathoms water within a cable's length of the shore. *Cork Harbour* has a deep and narrow entrance, through which the largest ships may enter at any time without regard to the tide. Within, the harbour expands into a magnificent basin, interspersed with islands, is landlocked, and large enough to accommodate the whole navy of England. Ships of the largest class come close to the quays at Cove; the anchorage is excellent; and, indeed, it is not possible to imagine a finer harbour The entrance is guarded by Fort Cambden and Fort Carlisle; and the harbour is farther protected by fortifications on Spike and Hawlbowline, two small islands opposite to Cove. *Youghall Harbour* and *Dungarvon Bay*, to the east of Cork, are indifferent harbours; and *Tramore Bay*, still further east, is one of the most dan-

gerous places on the Irish coast. *Waterford Harbour* is the estuary of the Noir, the Suir, and the Barrow; and such is its excellence and depth of water, that vessels of 500 tons burden can go up to Waterford, 15 miles from the sea, and lie safely alongside the quays. The estuary is about two miles wide at its mouth. *Wexford Harbour* is spacious but shallow, is encumbered with shifting sands, and has a bar at its mouth. *Dublin Bay* opens between Dalkey Island and Howth-head, which are six miles apart. The bay is exposed to easterly gales, the bottom is encumbered with sandbanks, and the bar at the entrance of Dublin harbour has only six feet water at ebb tide. With the view of lessening this bar, a pier has been carried five miles into the bay on the south side of the river, and is nearly met by a breakwater which projects from the northern shore; but these erections have proved of no material utility. Dunleary, or Kingstown harbour, on the south-east shore, and Howth harbour on the northeast shore of the bay, have been constructed at great expense, as asylum harbours. In the former, the largest ships may lie in security, in from 2¾ to 4 fathoms water; but in the latter the water is not deep enough to allow of large ships riding at ebb tide. *Dundalk Bay* is extensive, but generally shallow; and indeed nearly dry at low water. *Carlingford Lough* is about 2 miles wide at its mouth, and extends 10 or 12 miles inland, but is obstructed by a bar, with only 9 feet water at low spring ebbs. *Lough Strangford* is a very large basin, about 15 miles in length, by 5 or 6 in breadth; with deep water, good anchorage, and is well sheltered; but the entrance is formed by a narrow channel, 6 miles in length; and owing to the rapidity with which the tides rush through it, and to some sunk rocks near its east side, the bay is shunned by strangers. *Belfast Lough* is about 8 miles wide at its mouth, and extends 13 miles inland to Belfast. It is of easy aceess, and has in many places good anchorage; but the water shoals before it reaches Belfast, so that large vessels can get up to the town only with the flood-tide. *Lough Foyle* is an oval basin, 16 miles long, by 9 or 10 in breadth. At its mouth it is less than a mile wide, and, on the east side of the entrance, there is a large sand-bank called the Tuns, over which the sea sometimes beats with great violence. The lough is encumbered with shoals, and the navigation is rather intricate. *Lough Swilly* is a very fine gulf, extending 25 miles inland, with deep water, but is seldom visited, there being no town, nor even any considerable village upon its shores. *Killybeg's Bay*, on the south-west coast of Donegal, has a narrow entrance, but is free from danger, even for ships of any burden. *Donegal Bay*, a broad arm of the sea, containing several harbours and creeks; but none of them, except that of Killybegs, is accessible to large vessels. *Sligo Bay* is also a capacious inlet. *Blacksod Bay*, opening to the south, and stretching northwards 10 miles, between the peninsula called the Mullet and the mainland, has water sufficient to float the largest ships; but the shelter is indifferent. *Clew Bay*, a large sheet of water, protected from the western gales by Clare Island, has a depth of 15 fathoms; and has its eastern end studded with a great number of islands. *Roundstone Bay*, *Birterbuy Bay*, *Kilkerrin Bay*, and others on the Connemara and Moycullen coast, have all, particularly the first, deep water and excellent accommodation for the largest ships; but are rarely visited except by fishing boats. *Galway Bay* is a large arm of the sea, protected from the Atlantic by the south isles of Arran, which extend about 12 miles across its mouth. It contains many harbours and inlets.

CAPES—1. On the coast of Leinster:—*Dunary Head*, *Clogher Head*, *Howth Head*, *Wicklow Head*; *Greenore Point*, and *Carnsore Point*, north lat. 52° 12′, west long. 6° 16′ 30″. 2. In Ulster:—*Benmore*, or *Fairhead*, 631 feet above the level of the sea, presents a vast mass of rude, coarse, columnar stones, with a wide waste of ruins at their base, north lat. 55° 14′, west long. 6° 3′ 30″; *Bengore Head*, *The Giant's Causeway*, a vast basaltic promontory on the north coast of Antrim, consisting of huge piles of prismatic columns, partly rising into cliffs, and partly forming a sort of floor, seemingly paved with polygonal stones, which are just the tops of so many columns; *Innishowen Head*, at the entranee of Lough Foyle; *Malin Head*, the most northerly point of Ireland, in N. lat. 55° 2′, W. long. 7° 23′ 30″; *Bloody Foreland*, *Rossan Point*, both in Donegal. 3. In Connaught:—*Binwi Head*; *Urris Head*; *Achill Head*, the most westerly point of Ireland, though not on the mainland, in N. lat. 54°, W. long. 10° 11′; *Slyne Head*. 4. In Munster:—*Loop Head*, and *Kerry Head*, both at the mouth of the Shannon; *Dunmore Head*; *Brea Head*; *Bolus Head*; *Lamb Head*; *Crow Head*; *Mizen Head*; *Brow Head*; *Cape Clear*, on an island the most southerly point of Ireland, N. lat. 51° 24′ 55″, W. long. 9° 29′; *Galley Head*; *Dunworly Head*; *Old Head*; *Cork Head*; *Ring Point*; *Ardmore Point*; *Helwick Head*; *Brownston Head*.

ISLANDS.—*On the Coast of Leinster:—Lambay*, about 2½ miles from the mainland of Dublin county, has an area of 1371 acres, and is remarkable for its abundance of rabbits and seafowl, lobsters, crabs, and oysters, *Ireland's Eye*, on the north side of the peninsula of Howth, is a hill of a pyramidal form, with an area of 48 statute acres, and overrun by rabbits. *Dalkey*, is a small island at the south-east entrance of Dublin Bay. Between the island and the mainland, the strait is half a mile in breadth, and affords safe anchorage, with complete shelter from the north-east winds. *Tuscar* or *Tuskar* island and rocks, about 8 miles E. by N. from Carnsore point, in Wexford, rise only about 20 feet above the surface of the sea at high-water, and contain a lighthouse, built after the model of that of Eddystone. *The Saltees*, *Frails*, *Kunybeg*, and *Kunymore*, form a dangerous group of rocks and islets, which project 8 miles into the sea from the south coast of Wexford, and are joined to the mainland by a rocky bank, called St. Patrick's Bridge. A floating light is moored off the most southerly point.

On the Coast of Ulster:—Copland, or *Copeland islands*, three small islets, called *Big*, *Cross*, and *Mew*, directly opposite the new harbour of Donaghadee. *Rathlin*, *Rachlin*, or *Ragherry*, 3 miles N. by E. off Fairhead, is 5 or 6 miles long, by only 3 quarters of a mile broad. The island is formed of basalt, and its shores are deep and rocky, but there is deep water all round. The surface is considerably raised above the level of the sea. Barley and oats are grown, cattle of all kinds reared, and considerable quantities of kelp manufactured along the shore. *Inistrahul*, a small island 7 miles N.E. by E. from Malin-head. *Tory*, an island remarkable for its fertility, 7½ miles N. by E. off the Bloody Foreland in Donegal. *Arranmore*, off the west coast of Donegal, contains an undulating surface of 2000 acres.

On the Coast of Connaught:—Eagle Isle, *Innis Glora*, *Innis Keeragh*, *North* and *South Inniskea*, islets on the west side of the Mullet, in Mayo, with a cod and ling bank extending about 25 miles seaward. *Achil*, a large island of 23,000 acres, which rises in one part to the height of 1530 feet above the level of the sea. It is the resort of eagles, whence its name, which means "Eagle Island" (Innis Achil, *Aquilarum Insula.*) *Clare Island*, *Innis Turk*, *Innis Bofin*, and *Innis Lark*, are considerable islands to the south-west of Clew Bay, in Mayo, with a large cod and ling bank extending 20 miles out to sea. *The South Isles of Arran*, three islands named *Arranmore*, *Innis-main*, and *Innis-lehir*, off the entrance of Galway Bay. The largest contains 4607 acres, the second 1308, and the last 908.

On the Coast of Munster:—Enniskerry, small islands on the coast of Clare. *Blasquets* or *Ferriter's Islands*, a group of 12 islets off Dunmore-head, in Kerry. A delicious bird, called in Irish Gourdet, and compared to the ortolan, is peculiar to these rocks. *Valentia Island*, at the southwest entrance of Dingle Bay, in Kerry, contains an area of 9,600 acres, and is uncommonly fertile. *Skelligs*, rocks off the south-west point of Kerry, with two light-houses, are the only spots in the south of Ireland, where the gannet nestles. *Bear* and *Whiddy*, two large islands in Bantry Bay. *Cape Clear Island*, or *Dan Cleich*, on the coast of Cork, contains about 2000 acres, some parts of which are very high, and the remainder rough, shallow, and unfertile. Clear Island is the most southerly point of Ireland.

RIVERS. — The *Shannon* rises from the base of the Cullceagh or Cullcagh mountain in the north-west of Cavan, in a limestone cavern, from which it issues through a circular gulf, about fifty feet in diameter, and at once assumes the character of a considerable river. It then flows through Loughs Allen, Ree, and Derg, into the noble estuary which meets it below Limerick. From the head of Lough Allen to Limerick, the length of its course, including the lakes, is 144 miles; but the total length, embracing the estuary, is 214. It is navigable to the head of Lough Allen; but the depth is nowhere very great and is in some places, and at certain seasons, a good deal obstructed. Large sums of money have been expended, partly in making lateral cuts, and partly in deepening the bed of the river at those places. The height of Lough Allen above Limerick is about 144 feet; and the ascent is overcome by one double and twenty single locks, placed where lateral cuts have been made to avoid the rapids; but the navigation of the Shannon is, after all, by no means in a satisfactory state. Its principal affluents are: the *Boyle*, between Leitrim and Cavan; the *Suck*, from Roscommon; the *Inny*; the *Upper* and *Lower Brosna* or *Brusna*; *Mulkerna*, *Maig*, and *Fergus* from Clare and Ennis.

The *Noir* or *Nore*, *Suir* and *Barrow*, are three large rivers which have Waterford harbour for their common estuary, and their sources in the Sliebhbloom mountains in Queen s County. Their basin includes Tipperary, Queen's County, Kilkenny and Carlow, with part of Kildare, Wexford and Waterford. The Barrow has been made navigable for barges as far as Athy, 60 miles from the sea, which has been effected by the formation of 17 locks and a horse-trackway, and for large ships to New Ross, below its junction with the Noir, which is navigable for barges to Thomas Town. The Suir is one of the most valuable rivers of Ireland; vessels of 500 tons go up to Waterford, smaller ships to Carrick, and barges to Clonmel, a distance of 40 miles; but the navigation is very imperfect, and great difficulties are encountered by the boatmen in forcing the barges through the numerous shallows and rapids.

The *Blackwater*, *Lee*, and *Bandon*, all in the county of Cork; the *Slaney*, in Wexford, navigable for barges, 14 miles; the *Anna-Liffey*, in Dublin; the *Boyne* rises in the bog of Allen, near Carbury, in Kildare, 225 feet above the level of the sea, and flows into the Irish Sea, below Drogheda; the *Upper Bann* rises in the mountains of Mourne, in Down, and flows into Lough Neagh; the *Lower Bann* issues from Lough Neagh, runs with a rapid current between Antrim and Derry, and falls into the sea, 5 miles below Coleraine, to which town it is navigable for boats at high water; the *Foyle* formed by various streams, which unite at Strabane in Tyrone, flows past Londonderry into Lough Foyle. It is navigable for the largest merchant ships to Londonderry, for barges to St. Johnston; and to Strabane the navigation is continued by a canal.

LAKES. — *Lough* Neagh*, the largest lake in the United Kingdom, in the centre of Ulster, is about 20 miles in length, by 10 in breadth, with a superficial extent of nearly 100,000 imperial acres. It is fed by several rivers, but its only outlet is the Lower Bann. Its surface is 48 feet above the level of the sea, and its greatest depth is 102 feet. The shores are low, and consist chiefly of a level strand or marshy border, which is liable to floods; frequent squalls and want of shelter render its navigation rather dangerous to sailing vessels. Its waters are celebrated for their petrifying quality. *Lough Erne*, in Fermanagh, consists properly of two lakes, connected by a broad winding channel. It extends altogether about 40 miles in length, and covers an area of 40,000 acres. Both lakes are full of islands. The surface is between 140 and 150 feet above the level of the sea, into which the water is discharged by a rapid current of 9 miles, which ends in a grand cataract at Ballyshannon. *Lough Corrib*, in Connaught, is 24 miles long, by 14 broad, at the widest part, but, in the middle, it is contracted to a narrow channel, crossed by a ferry. It is said to be only 16 feet above the level of the sea, from which it is 5 miles distant. *Lough Mask* lies about 3 miles from Lough Corrib, and is about a third part of its size. *Lough Conn* and *Lough Cuttin*, in Mayo, 11 miles in length, varying from 1 to 4 in breadth, are navigated by barges, and scarcely 30 feet above the level of the sea. *Loughs Allen*, *Ree*, and *Derg*, are formed by the Shannon: the first is 10 miles long, from 4 to 5 broad, and 160 feet above the level of the sea; the second is about 17 miles in length, but of the most irregular shape; and the third is a narrow lake about 23 miles in length, with deep bays and inlets, 98 feet above the level of the sea. The *Lakes of Killarney* lie in the midst of the mountains of Kerry, but are more celebrated for their picturesque beauty than for their extent. They are three in number, but quite contiguous, and boats pass from one to another. The lowest lake contains about 3000 Irish acres, with 33 islands; its surface is about 50 feet above the level of the sea; the depth is very great, one place giving a sounding of 42 fathoms. The middle lake is about 640 acres in extent; and the uppermost 720, joined to the middle one by a strait 3 miles in length, which has in many places the appearance of a beautiful river. The upper lake lies in a hollow formed by some of the most stupendous mountains in Ireland, so that its scenery is in the highest degree magnificent and sublime. In other places, however, especially on the eastern shores of the lowest and middle lakes, the scenery is of the softest and most agreeable kind; and it is in the contrast between that and scenery of the most wild and rugged character, that the great charm of the lakes of Killarney consists. *Lough Derg* (Red Lake), a small lake in the south-eastern corner of Donegal, containing several small islands, on one of which is a noted place of pilgrimage, called St. Patrick's Purgatory, consisting of a cave sixteen feet in length, by only two and a half in breadth, by passing through which, and performing sundry tedious ceremonies, the deluded pilgrims believe that they obtain a remission of their sins. For this purpose, every year, between the 1st of June and the 15th of August, crowds of people arrive at Lough Derg from all parts of Ireland, to go through their stations, as the ceremonies and penances are called. Besides these, there are many other lakes in Ireland, the total superficial area of which has been computed to amount to 455,399 imperial acres.

MOUNTAINS. See *ante*, pages 160-4-5.

CLIMATE. — West winds are still more frequent in Ireland than in England; south-west winds prevail in winter; west winds in summer and autumn; and the east, north-east, south-east, and north, in spring. Westerly winds prevail during nearly three-fourths of the year; and, blowing from the Atlantic, which is heated by the current of the Great Gulf Stream, they produce a mean annual temperature much higher than would otherwise accord with its distance from the equator. This mean result arises more from the mildness of winter and spring, than from the heat of summer and autumn. Frost and snow are not frequent, and are seldom of long continuance in the southern and south-western districts. In these, however, the falls of rain are frequent and heavy during autumn and winter. The winter also continues much longer than in England; and spring, summer and autumn, are late. Owing to the humidity and mildness of the atmosphere, and the copious falls of rain in autumn, the country

* The word *lough*, like the Scoto-Celtic *loch*, is applied indiscriminately to fresh-water lakes, and to land-locked, or deep inlets of the sea.

retains its verdure, and the trees their foliage, till very late in the year. The temperature, however, is in some degree influenced by elevation above the level of the sea, by distance from the west coast, by the number of inland lakes, and by the nature of the soil and substrata. The country along the coast is thus much milder and more humid than the interior, and the southern and western portions of the island are in the same way distinguished from the northern and eastern parts. In short, "the prevalence of westerly and south-west winds, the consequent humidity of the air, the remarkably broken and indented state of the western and northern coasts, the number of loughs or lakes, and considerable rivers, and the temporary influence of the Atlantic Ocean, combine to render the winters mild in respect of temperature, but stormy and rainy; to prevent the continuance of frost; to promote vegetation; to give the face of the country a verdant appearance; to increase fertility; and to produce a greater irregularity and uncertainty of the seasons and weather than in England."*

The worst feature in the climate of Ireland is its constant moisture without rain. Yet even this humidity contributes its full share to the peculiar adaptation of the soil for pasturage, and gives to the island that perennial verdure which has procured for it the title of the Green, or Emerald Isle. Nor does its peculiarity of climate seem to detract from its salubrity; on the contrary, so far as respects its effect upon the human constitution, the climate of Ireland is highly salubrious, and can hardly be said to be materially less so than the climates of England and Scotland.

GEOLOGY AND MINERAL PRODUCTIONS. — Though the physical and geological structure of Ireland is similar to that of England, still the relative geographical positions of the rocks are essentially different. In England, the mountain ranges, consisting of the primary and transition classes, are situate near the west coast, and the newer strata to the east and south, where the country is comparatively flat. In Ireland, on the contrary, the coasts are for the most part mountainous, while the interior is flat, and rarely presents any considerable elevations. Thus, we find the primary mountains of Antrim, Derry, and Donegal, occupying the north and north-west coasts; those of Sligo, Mayo, Galway and Kerry, the west and south-west; and the slate districts of Cork and Waterford, the south and south-east; and the lofty mountains of Wicklow, Louth, and Down, the east. These mountain tracts, however, rarely extend more than twenty miles inland; and the interior, with little exception, is composed of flat or gently swelling grounds, covered by a rich and fruitful soil.

The composition, character, and relative position of the rocks are similar to those of other countries; the only very remarkable feature being the unusual preponderance of the carboniferous limestone, which extends throughout the whole of the flat districts, and forms the surface rock of nearly two-thirds of the country. There are six districts composed of primary or transition rocks, situate near the sea-coast, but detached from each other by the interposition of strata of the secondary limestone series. The most extensive primary district occurs on the north-west coast, and occupies the greater part of Donegal, Derry, and Tyrone. The second is situate on the north-east coast of Antrim, and consists of a small mountain group, which is highly interesting. The third occupies the western part of Galway and Mayo, and extends in a north-eastern direction into Sligo and Leitrim, in the form of a long and narrow ridge, known by the name of the Ox Mountains. These districts contain rocks of the crystalline or igneous class, as well as those of the sedimentary. The igneous consist of granite, syenitic granite, greenstone, and greenstone-porphyry; and the sedimentary, of mica-slate, shining-slate, quartz-rock, and primary limestone; the latter are all regularly stratified, the general range or strike being north-east and south-west; from which, however, there are some remarkable variations. The fourth, consisting chiefly of transition rocks, is situate on the east, south-east, and south-west coasts, occupying considerable portions of Down, Armagh, Monaghan, Cavan, Louth, Meath, Longford, and Roscommon. The rocks consist of greywacké slate, fissil clay-slate, chlorite-slate, and, in the neighbourhood of the granitic district, of hornblende slate, schistose porphyry, and other metamorphic rocks, with structures intermediate between sedimentary and crystalline; besides granite, syenitic granite, greenstone porphyry, and clay porphyry, in large masses; trap, pitchstone, and porphyry, in dikes. The fifth district extends through Kildare, Wicklow, Wexford and Kilkenny, and contains rocks very similar to those of the fourth district, with this exception, that, in the vicinity of the granite, beds of mica-slate occur, which are wanting, or of rare occurrence in the other. Among the igneous or protruded rocks of

* M'Culloch's Statistical Account of the British Empire, i. 376.

all these districts, granite appears to be the oldest and the most extensively diffused. But masses of greenstone also occur, and are, in many cases, interposed along the line of boundary between the granite and the slate, and in some instances have forced their way through the granite itself. With the exception of granite, which is used as a valuable building stone, and some inferior slate quarries, the only valuable rock, in an economical point of view, which occurs in these districts, is primary limestone, which is abundant throughout the schistose districts of Donegal, Derry, Tyrone, and Galway, and is burned into lime for manure. In some places, however, the limestone beds produce beautiful varieties of crystalline marble: and, in Galway, quarries have been opened of a valuable kind of serpentine, striped and mottled, white and green, from which large blocks have been procured. The whole of these districts likewise contain metalliferous veins; but only a few of them have been worked. The sixth district consists of the great mountainous region, which extends from Waterford on the east coast, to Dingle Bay on the west, and comprehends the whole county of Waterford, and large portions of Cork and Kerry. It contains two varieties of slate, older and newer, and abundance of carboniferous or mountain limestone, which is found in the valleys of all the principal rivers. The older transition slate of this district is of a grey colour, and similar in age, composition, and structure, to that of Down, Kildare, Wicklow, and Wexford. The second or newer slate usually rests unconformably on the older; the lower portions of its strata consist of alternating beds of brownish red quartzose conglomerate, and coarse red slate, which are succeeded by alternations of red and grey quartz rock, red quartzose slate, and clay-slate, gradually becoming finer, till at last the upper beds produce varieties of purple, brownish red, and reddish grey clay-slate, which are quarried for roofing, particularly in the valley of the Blackwater, near Lismore. In Waterford and Cork these strata form successive undulations, the ridges of which have an east and west direction; the beds always incline towards the valleys of the principal rivers, and thus form troughs, which are filled up by hardened sandstone, and secondary limestone, whose strata rest conformably on the clay-slate. The southern clay-slate district contains several copper and lead mines of great value, particularly those of Knockmahon, in Waterford; Allihies, near Berehaven, in Cork; Ardtully, near Kenmare, in Kerry; and the Audley copper-mines near the south-western coast of Cork. In Tyrone, immediately east of the village of Pomeroy, there is a small tract of grey micaceous slate, resting directly on the syenitic granite, covered unconformably on the south, west, and east, by old red sandstone, and containing a profusion of organic remains. There are, besides, several mountain ranges in the interior, insulated in the flat secondary limestone country, and composed, partly of transition slate, and partly of overlying beds of old red sandstone. The most important of these ranges are the Curlew mountains in Sligo, which consist entirely of old red sandstone; the Slievebon mountains in Roscommon, the Derrybryan and Tullow mountains in Galway and Clare, on the west side of Lough Derg; the Keeper, Devil's Bit, and Sliebloom mountains, in Tipperary and Ossory; and the Galties and Slievenaman mountains in Limerick, Tipperary, and Kilkenny.

These districts and insulated mountain-ranges include the whole of the mountains and hill country of Ireland; and all that it is necessary to state of the great interior valley is, that it is entirely composed of secondary rocks, consisting of the old red sandstone, carboniferous limestone, coal, and its accompanying strata. Besides the coal which occurs in thin and impure beds in the millstone-grit series, there are six other coal districts, which appear to belong to a distinct formation, the whole of which, except that of Antrim, rest upon the upper or splintery limestone. They contain two distinct kinds of coal, namely, the simply carbonaceous, or stone coal, with its accompanying anthracite or culm, and bituminous or blazing coal. The first, with the exception of two small beds in Antrim, are all situate to the south of Dublin; the second to the north of that city. The southern coal districts consist of the Leinster; the Slieve-Arda, or Tipperary; and the Munster: the northern, of the Monaghan, the Tyrone, and the Antrim. The Leinster coal district is situate in Kilkenny, Carlow, and Queen's County, and contains seven workable beds. The upper beds, which are the purest, being free from sulphur, are now nearly exhausted; but three of the lower beds, which are very extensive, have never been worked, except where they occur near the surface, and consequently this district still contains an abundant supply of coal and culm. The circumstances of the Slieve-Arda, or Tipperary district, are nearly similar to those of Leinster. It forms a ridge of hill country, considerably elevated above the limestone which surrounds it, and on which it rests. As far as yet known, it contains but three beds of coal,

the lowest of which is only nine inches thick, the second and third each two feet. The coal is of good quality; and the principal collieries are situate at Colebrook and Coolquil, in the neighbourhood of Killenaule. The Munster coal district is perhaps the most extensive in the empire, occupying considerable portions of Clare, Limerick, Kerry, and Cork; and coal-mines have been partially wrought in all of those counties. The coal is usually of a slaty structure, much softer than that of Tipperary and Kilkenny, and is almost exclusively used for burning lime. The Monaghan district is situate at Carrickmacross, in that county, and rests on a small tract of carboniferous limestone in the central greywacké slate district. Hitherto no coal worth working has been met with; but one bed of fourteen inches, one of one foot, and several still thinner, have been discovered. The Tyrone coal district is situate to the north of Dungannon in that county, and though small, is much richer than any other in Ireland. At present nine workable seams are known, which vary from three to nine feet in thickness; but the stratification is much disturbed by faults; and the expense and difficulty of working it, is rendered so great by the soft and incoherent nature of the accompanying beds of shell and sandstone, that the mining adventurers have rarely derived any considerable profit from it. The Antrim coal district is situate on the northern coast of that county, close to Fairhead; the collieries were wrought at a very remote period, but at present no coal is raised, owing partly to the difficulty of working to the dip of the old excavations, and partly to the want of a safe harbour. In the counties of Antrim, Tyrone, Armagh, and Down, a large tract of country occupied by the secondary formation is covered with stratified or tabular basalt, which, in some places, exceeds 900 feet in thickness, and spreads altogether over an area of 800 square miles. The same part of Ireland presents the only specimen of columnar basalt to be found in the island, which is most remarkably exhibited in the Giant's Causeway, and several other places on the north coast of Antrim, and at Doon Point, on the island of Rathlin. But, besides the tabular trap, there are also vast protruded masses of greenstone observed more or less abundantly throughout the whole of the north and north-west of Ireland, among rocks of all ages and formations. These protrusions consist of two kinds, namely, whin dykes or basaltic veins, and huge amorphous masses of greenstone or greenstone-porphyry, which occasionally form large hills, and which, among the igneous rocks, are second only to granite in extent and importance.

The tertiary formations of Ireland are less extensive than those of England, and are probably lacustrine; the most important deposit is situate along the south-eastern margin of Lough Neagh. It occurs also in other places in Tyrone, Armagh, and Antrim, all in the neighbourhood of that lake. Potter's clay, similar to that of Lough Neagh, is also found in a valley resting on the carboniferous limestone to the south-east of Cahir, in Tipperary. White clay also occurs in a similar position, resting on limestone, near St. John's Point and other places on the west shore of Lough Ree, in Roscommon.

Throughout the low flat middle districts of Ireland there are vast accumulations of diluvial matter, composed generally of clay and limestone gravel, in the form of low but steep ridges of hill, generally known by the name of Eskers; and to which may be attributed the origin of those immense tracts of bog which are everywhere spread over that region. These seem to be occasioned by stagnant water pent up, as it is now found, above the level of the dry country, by gravel hills, which form continuous ridges round the edges of the bogs. *(Geological Structure of Ireland by R. Griffith, Esq. Appendix, No. I. to the Second Report of the Railway Commissioners.)* Mineral springs are numerous, most of them chalybeate. Those of most note for their medicinal qualities are that at Mallow, in Cork, which resembles the Hot-wells at Bristol; Ballynahinch in Down, and Goldenbridge near Dublin, sulphurcous and chalybeate; Swadlinbar in Cavan, and Lucan in Dublin, sulphureous; and Castleconnell near Limerick, chalybeate.

SOIL AND VEGETATION. — The prevalent soil of Ireland is a fertile loam, resting on a rocky bed, chiefly composed of limestone. The depth, though in general not great, is in some places such as to admit of fresh vegetable mould being repeatedly thrown up by successive ploughings, each extending to a greater depth. This is most striking in Meath, and in that portion of Tipperary and Limerick, long distinguished by the name of the Golden Vale, from its extraordinary fertility. In other parts of the country, particularly in Galway, the rock rises above the surface in wavelike ridges, the interstices being filled with rich mould, and covered with a thick close sward, which affords excellent pasture for sheep. Large districts of grazing land, like

the Downs of England, are rarely met with. The only extensive tract of this description is the Curragh of Kildare, which has been used, from time immemorial, as a sheep-walk. The mountains are capable of tillage to a considerable height; and their summits, except those of a few of the very highest, yield food for sheep in summer. The vegetable productions are almost precisely the same as those of England.

Ireland was once so thickly covered with trees, as to entitle it to the name of the Island of Woods. During the early period of its connection with England, its extensive and impenetrable forests formed the chief obstacles to the progress of the conquerors The roof of Westminster Hall is said to have been formed of oak cut in the woods of Shillelagh. Numerous trunks of large trees are constantly found in the bogs, and even in the mountain tracts, which have long been devoted to the pasturage of sheep, trees shoot up spontaneously, wherever the land is secured from the intrusion of cattle; and many places besides, where no vestige of a tree is now to be seen, retain in their names a proof that they were formerly covered with "wood;" but latterly timber has been very scarce. The extension, however, of agricultural improvement, and more especially the timber act, which gives to the tenant, at the end of his lease, a pecuniary interest in the trees he has planted, are gradually supplying the want of wood.

ANIMALS. — These being in almost every respect the same as those of Britain, require no specification. A delicious bird, called in Irish *gourdet*, and compared to the ortolan, is peculiar to the Blasquet Rocks, on the coast of Kerry; and the Irish believe that every sort of venomous reptile was banished from the island by St. Patrick. Ireland was also famous for a peculiar breed of falcons; and the bones and horns of a gigantic elk or moose-deer are found in the bogs.

PEOPLE. — The Irish originally belong to the *Celtic* stock; and a dialect of the Celtic language nearly akin to the Erse of Scotland, still prevails in the more remote parts of the island, particularly in the south and west. Since the conquest by Henry II., the English language and the English blood have pervaded the island, so that the Irish are now very much a mixed race. Many Scottish colonists have at various times settled in Ulster, and have transfused their national character into a large portion of the inhabitants of that part of the island. According to the native writers and orators, the lower classes in Ireland are the finest peasantry in the world; and even impartial observers have characterised them as a cheerful, light-hearted, and thoughtless race; but they are, in general, idle and slothful; and the great bulk of them are sunk in the lowest state of ignorance, poverty, and degradation. For many centuries they have stood to their governors in the relation of a conquered people; their country has been parcelled out among adventurers, whose descendants still either live among them like strangers, or, in too many cases, spend at a distance the revenues which they derive from the soil, by means of hired servants, or lessees, caring little for the improvement of the native population. In addition to this evil, the Irish have had forced upon their country a religion which they abhor, and a church establishment which they are obliged to support; while the clergy of their own persuasion, who depend entirely on the contributions of their flocks, claim at least an equal allowance. That the Irish have borne so long such a state of things as this, without becoming even more demoralized than they are, is probably the strongest proof which could have been given of their good nature, and right dispositions. But, how the enormous social and political abuses which now exist, and the consequent moral evils which have overspread every corner of this luxuriant island, are to be removed, and a better state of things introduced, is a problem which the wisest statesmen, and the most ardent philanthropists are alike unable to solve.

POPULATION. — Before the calculations of Sir William Petty, in the middle of the seventeenth century, scarcely any data for a probable, or even a conjectural, estimate of the population existed; and the estimates which have been formed in latter times, though founded upon what were intended to be actual enumerations, have been extremely defective and uncertain. According to Sir William's second estimate, in 1672, the population of Ireland amounted to 1,320,000. In the succeeding period of 50 years it had nearly doubled. In the next half century, from 1723 to 1777, it had advanced more slowly, being in the latter year only 2,690,000; but from 1777 to 1831, it had been nearly trebled, the period of doubling, from 1777 to 1805, being but 28 years. The latest return was made in 1841 by order of Parliament.

Population of Ireland at different Periods.

1672, Sir William Petty,	1,320,000
1731, Clergy of the Established Church,	2,010,221
1754, Collectors of Taxes,	2,372,634
1785, Ditto Ditto,	2,845,932
1811, Parliamentary Return,	5,937,856
1821, Ditto, Ditto,	6,801,827
1831, Ditto, Ditto,	7,734,365
1834, Commissioners of Public Instruction,	7,943,940
1841, Parliamentary Return,	8,175,238

The population is most crowded and numerous in the counties of Armagh, Monaghan, and parts of Down and Antrim. Diminishing in density, but still furnishing a large proportion to the square mile, the population extends over Longford, Westmeath, King's, Queen's, Kilkenny, Carlow, and Wexford; and thence, a large mass, second only to the northern portion, spreads over Tipperary, Limerick, and parts of Cork and Waterford. Beyond the Shannon lies a district very thickly peopled; and the parts of Roscommon, Leitrim, &c. adjacent to the river, have nearly the same proportion. The people of these four divisions differ in social condition, in habits, character, and even personal appearance, more than the narrow limits of their location would lead us to expect. Those of the north are better lodged, clothed, and fed than the others; the wages of labour are higher, being on an average about a shilling a day; and their food consists chiefly of meal, potatoes, and milk. They are a frugal, industrious, and intelligent race, inhabiting a district for the most part inferior in natural fertility to the southern portion of Ireland; but they cultivate it better, and pay higher rents in proportion to the quality of the land, notwithstanding the higher rate of wages. In the southern districts, the condition of the population is in every respect inferior to that of the northern; the habitations are worse; their food interior, consisting at best of potatoes and milk, without meal; and wages are lower, being about eightpence a day; yet the peasantry are an active, robust, and athletic race, capable of great exertion. They are often, however, exposed to great privations; ignorant, but eager for instruction; and readily trained, under judicious management, to habits of order and steady industry. The population of the midland districts does not differ materially in condition from that of the south; but the inhabitants of the western district are decidedly inferior to both in condition and appearance. Their food consists of the potato alone, without meal, and in most cases without milk; their cabins are wretched hovels; their beds straw; the wages of labour reduced to the lowest point, being not more than sixpence a day; poverty and misery have deprived them of all energy; labour brings no adequate return; and every motive to exertion is destroyed. Agriculture among them is in the lowest and rudest state. Substantial farmers are rarely to be found; the country is covered with small occupiers, and swarms with an indigent and wretched population. Some great proprietors have indeed made exertions to introduce a better system of agriculture, and to improve the condition of their immediate tenants; and a few of the smaller proprietors have made humble attempts to imitate them; but the great mass of the western population exhibits a state of poverty bordering on destitution. (*Second Report of the Railway Commissioners*, p. 5 & 6.)

Religion. — The established church is a branch of the *United Church of England and Ireland*, and the doctrine and discipline are of course the same. The hierarchy consists, or, when the provisions of certain late acts of Parliament come into operation, will consist of 2 archbishops and 12 bishops, 33 deans, 26 precentors, 22 chancellors, 21 treasurers, 34 archdeacons, two provosts, and one sacristan, 178 prebendaries, and 9 canons. The number of parishes is 2348, condensed into 1345 benefices, each under a separate incumbent. The income of the whole establishment amounts to £865,535, derived from tithes and land rents, and the population for whose spiritual benefit it is supported, amounted in 1834 to 852,064. Above four-fifths of the people are *Roman Catholics*. The hierarchy of the Roman Church still continues of the same form that it bore at the period of the Reformation, consisting of 4 archbishops, and 22 bishops, to which another bishopric has been lately added,—that of Galway. The hierarchy are supported by the profits of some one or more parishes in their respective dioceses, by fees from the incumbents of the others, and by those for marriage licences. The incomes of the bishops, as well as those of every class of the Catholic clergy, are wholly derived from the contributions of their flocks. Monasteries and convents are numerous, and some, particularly those for females, are well endowed. *Presbyterianism* prevails chiefly in Ulster. The Presbyterians who ad-

here to the doctrines, and hold communion with the Church of Scotland, are under the spiritual superintendence of the Synod of Ulster, and their ministers are maintained by an annual parliamentary grant called the Regium donum, in addition to the voluntary contributions of their people. The following table exhibits the population according to the several sects, as in 1834, and also the proportion per cent. borne by the several religious denominations to the total population —

Denomination.	*Total Population.*	*Proportion per cent.*
Established Church,	852,064	10.726
Roman Catholics,	6,427,712	80.913
Presbyterians,	642,356	8.086
Other Dissenters,	21,808	0.275
	7,943,940	100,000

EDUCATION.—The efforts to improve the state of the people by literary instruction have been numerous and extended. They may be arranged under three heads: colleges or universities; academies and high-schools; and primary schools for educating the mass of the people. Trinity College, Dublin, is the only institution of the first class. It was established by Queen Elizabeth in 1593, and is attended by about 2000 students. There is, however, an academy at Belfast, which, though possessing none of the privileges of a university, has nevertheless all the advantages of one, consisting of a numerous body of professors of science and literature, whose lectures are well attended. It has been sanctioned by Parliament, and receives regular annual grants of public money. There is also a college for the education of Roman Catholics, at Maynooth, supported by Government. With respect to the second class of institutions, an act of Queen Elizabeth required that a grammar-school should be maintained in every diocese by the bishop and clergy. James I. vested large tracts of forfeited lands for the maintenance of similar schools; and several classical schools were also established by private individuals. The primary schools owed their foundation to an act of Henry VIII., which bound every incumbent of a parish by oath to maintain a school for teaching English. This, however, was neglected by many, and very laxly observed by most. Soon after the revolution of 1688 a project was started and eagerly followed up by the established clergy, of founding schools, in which the children of the poor should be instructed in the rudiments of literature, and in useful works; and these schools having been incorporated by act of Parliament, received the name of Charter-schools. Large sums were annually voted by Parliament for their support, in addition to those procured by donations or bequest; but nothing further was practically attempted till 1819, when a society was formed in Dublin for the purpose of instructing the poor, without interfering with their religious opinions. This society was at first generally supported, and promised fair to realize its professed object; but a stipulation subsequently introduced into its regulations, requiring the Bible to be used as a school-book, roused the suspicions of the Roman Catholic clergy, who excited so strong a dislike to it throughout the country, that it was found expedient to transfer the management of education to another body. This is now delegated to a Board, consisting of the two archbishops of Dublin, the moderator of the Synod of Ulster, and other commissioners appointed by the Crown The main feature of difference between this Board and the Kildare Street Society, which it superseded, is, that instead of the Bible being used as a school-book, only selections from it are used, and a portion of every week is set apart, in which the clergy of every sect may instruct the pupils of their own flock in their respective tenets. The Board proposed to establish five professorships in the training institution; namely — 1. Of the art of teaching and conducting schools; 2. Of composition, English literature, history, geography, and political economy; 3. Of natural history; 4. Mathematics and mathematical science; and, 5. Mental philosophy, including logic and rhetoric. It is also proposed to establish a model school for each county. The population of Ireland being estimated at 8,000,000, of whom about one-fourteenth would require the aid of the national system of education, there should be 5000 schools, with an average number of 100 pupils, established; and, after these are erected, it is estimated that the system could be carried on permanently at the annual cost of £200,000. The annual salaries of teachers of primary schools is estimated at £25, with a gratuity of £5, dependent on good conduct; and those of teachers in the model schools at £100, with two assistants at £50 each. The Commissioners, in their Sixth Report to the Lord-Lieutenant, state, that they had at the commencement of 1839, 1384 schools in exist-

cnce, which were attended by 181,264 children, and that, at the termination of the year, the number of schools had increased to 1581, and the attendance of children to 205,000.

GOVERNMENT. — Ireland, though for many centuries a conquered country, dependent upon the Crown of England, retained a Parliament and Legislature of its own till the year 1801, when a formal union of the two kingdoms was effected. It is now represented in the Imperial Parliament by 28 peers elected for life; 1 archbishop and 3 bishops, who sit annually according to a rotation of sees; and 105 members of the House of Commons. The executive government is vested in a *Lord-Lieutenant*, deputed by the Crown, who holds his office during the royal pleasure. He is assisted by the *Privy Council*, a body also nominated by the Sovereign, and invested with extensive powers both judicial and ministerial; also by a *Chief Secretary*, who is always a member of the House of Commons, and the more immediately responsible member of the Irish Government. Each county is also placed under a Lord-Lieutenant, nominated by the Crown, who is responsible for the preservation of good order; and is aided in his duties by deputy-lieutenants, likewise appointed by the Crown. As in England, there are also county officers who bear the same official title, and perform the same duties as the High-sheriffs of the former country. The levy and expenditure of money for local purposes, such as making and maintaining high-roads, bridges, canals, harbours, &c., is vested in the grand juries of the counties, the members of which are named annually by the High-sheriff from among the chief landed proprietors or their agents. This arrangement has given rise to much abuse in the management and application of the funds entrusted to them, while the sums levied bear very heavily on the industry of the actual landholder. The administration of the law is vested in the *Lord Chancellor* assisted by the *Master of the Rolls;* and in the twelve judges of the supreme *Courts of King's Bench*, *Common Pleas*, and *Exchequer*. The twelve judges visit the counties twice a-year, in six circuits, for the trial of civil cases in *nisi prius*, and of the more serious crimes. Minor criminal offences are brought before the magistrates at petty-sessions, who are then assisted by a lawyer nominated by the Crown, with the title of Assistant-barrister. A very numerous armed force has long been maintained in Ireland. Regular troops to the number of from 20 to 25,000 men used to be quartered in permanent barracks throughout the island, but recently the number has been very considerably reduced. Besides these, a well-armed and organized body of police, amounting to nearly 6000 effective men, is maintained, under the immediate control of stipendiary magistrates appointed by the Crown.

FINANCES. — From the earlier part of the reign of George III. to the present time, the *public income* has been derived from the *customs*, *excise*, *land-tax*, *assessed taxes*, *stamps*, *postages*, *duties on pensions and offices*, *lotteries*, and *poundage pells* and *casualties*. The Irish lotteries ceased at the Union; the land-tax, at the consolidation of the Irish Exchequer with that of Great Britain in 1817; and the assessed taxes were repealed in 1822-3; since which time the income has been derived solely from the customs, excise, stamps, postage, poundage, and casualties. For the year ending 5th January 1838, the gross public revenue of Ireland amounted to £4,636,842, and the net produce to £4,476,239; viz. Customs, £1,945,849 — net, £1,937,033; Excise, £1,835,392 — net, £1,829,748; Stamps, £475,677 — net, £460,388; Post-Office, £261,296 — net, £235,744.

The *national debt* of Ireland increased with great rapidity towards the close of last century, and continued to accumulate till the year 1817, when the English and Irish Exchequers were consolidated. In 1817 it amounted to £134,602,769.

PRODUCTIVE INDUSTRY. — Till of late years Ireland was almost exclusively a pastoral and agricultural country; the population drew their principal support from cattle and the produce of the soil; and their few manufactures were derived from the same source.

§ 1. *Agriculture.*

The agricultural system of Ireland is, generally speaking, in the worst possible state. In the *grazing* counties farms are large, often spreading over a thousand acres; but in the counties where greater attention is paid to tillage, they are very small, and are sometimes limited to two or three acres. These small patches are held at rack-rent by the miserable cultivators, who derive from their labours only the scantiest and the poorest subsistence for themselves. In such circumstances, agricultural improvement is not to be expected; and besides, the Irish peasantry and farmers, notwithstanding their poverty, are so slothful, and so wedded to the usages of their

forefathers, that no persuasion will induce them to try new methods of increasing the produce of their farms. The consequence of this is, that the agriculture of Ireland has long remained stationary, while its farmers and its peasantry are generally in the lowest state of rudeness and poverty; and yet so happy and contented are they, that they make no effort to raise themselves to a more comfortable condition.

The *dairy farms* form a conspicuous feature in the rural economy of the country, and occupy a still larger portion of the soil than that used by the grazier. *Butter*, much celebrated for its excellence, is exported in large quantities; but the making of *cheese* has hitherto been unsuccessful. Grazing farms are mostly found in Limerick, Tipperary, Roscommon, and Meath; from which large numbers of cattle, and great quantities of salted beef are exported. The chief breeding counties for sheep are Roscommon, Galway, Clare, Tipperary, and Limerick; but no county in Ireland equals Galway in the management of this valuable animal; and nowhere are finer flocks to be seen. Latterly, much attention has been directed to the improvement of this kind of stock, by judicious crossing. Merino sheep have been introduced, and are found to agree well with the soil and climate. On the mountains there is still found a breed similar to that of Wales, of small size, with nearly as much hair as wool. The total number of sheep in Ireland in 1832, was estimated at 2,000,000. Large flocks of *goats* are also found among the mountains, where they are kept for their milk, and where the cottager is poor indeed who does not reckon at least one as part of his property. *Horses* for agricultural purposes are seldom found of great excellence; but a breed for general use, both for draught and saddle, is much esteemed; and blood horses, of high price and repute, are bred in the rich pastures of the principal grazing counties. *Hogs* are kept in great numbers; and in general, among the peasantry, the hog is the inmate of the cabin, a member of the family, upon whom the owner chiefly depends for the payment of his rent. Hence it acquires a docility of manners unknown elsewhere. Its food is invariably the potato; and, when fit for market, it is either slaughtered in the provision-markets of Cork, Waterford, Belfast, and Newry, or exported alive, chiefly to Liverpool and Bristol.

§ 2. *Fisheries.*

It has been said, "that there is scarcely a part of Ireland but what is well situate for some fishery of consequence; and that her coasts, and innumerable inlets and creeks, are the resort of vast shoals of *herring*, *cod*, *ling*, *hake*, *mackerel*, &c., which might be converted into mines of wealth;" and "that the inland waters abound in all that can invite an angler to their banks, are more largely stored, and with fish of a better quality, than elsewhere in the United Kingdom." But with all these natural advantages, the fisheries of Ireland are very far from being in a flourishing condition, and all the efforts which have been made by companies and government commissioners to establish systematic fisheries have hitherto proved abortive.

§ 3. *Manufactures.*

The original staple manufactures of Ireland were those of *woollen goods* and the *tanning of leather;* for both of which, the rich pasturages, so well adapted for black cattle and sheep, furnished abundant materials. The woollen manufacture is, however, still closely confined to the coarsest kinds of goods, though the manufacture of fine cloths has been introduced at Dublin. Manufactories of broad cloths and blankets exist nowhere north of Dublin; flannels are made in Wicklow; and blankets in Kilkenny. Frieze of the coarsest kind is made in most of the counties by the farmers during the intervals of their agricultural labours, for their own use, and for the supply of the adjoining districts. Upon the whole, however, say the Railway Commismissioners, the woollen trade of Ireland, though much less than it was, is now in a sounder and healthier state than when existing under the influence of protecting duties. The manufacturers, though few in number, carry on the business with activity and intelligence; they have adopted every new improvement in machinery, and they have generally an abundant supply of water, and of water-power. The wages which they pay are less than those paid for similar work in England; and Liverpool and London, the great marts for foreign wool, dyes, and oil, are fully as accessible to the Irish as to the English manufacturer; they are in consequence able to produce an article capable of sustaining competition with the best specimens of Yorkshire cloth. For a long period, great efforts were made to introduce and foster the *manufacture of linen*. A Public Board was instituted for the purpose, to which a large sum of money was annually granted for premiums, and the supply of wheels and other implements; but in 1830 the grants were discontinued, and the Board has consequently ceased to act. This species of manufacture is most extensively pros-

cuted in Ulster, and has latterly been extended into Connaught and Munster. Rivals indeed have started up in Yorkshire, who have withdrawn part of the trade; but the loss has been compensated by the introduction of the *cotton manufacture* into Ireland, a branch of industry which at one time gave employment to upwards of 30,000 people in Antrim and Down alone; but it is represented as declining; and several of the mills at Belfast, originally intended for cotton, are now employed in spinning flax. The other principal manufactures are those of *muslin*, *leather*, *glass*, *salt*, *vitriol*, and *whisky*. Of the last article, great quantities are distilled and consumed chiefly in the country. The furnishing of provisions for the army and navy, and for the foreign market, has long been a great source of wealth to the country. The towns which participate most largely in this branch of trade, are Cork, Limerick, Waterford, Belfast, and Newry.

§ 4. *Commerce.*

The external trade of Ireland consists of two great branches: the trade across the Channel with Great Britain, and the commerce with other nations. The imports may be considered as almost wholly intended for home consumption, either as materials of manufacture, or articles for the immediate use of the people. The principal articles imported in a raw or unwrought state are coal, iron, flax-seed, flax, hemp, ashes, cotton, wool, timber, deals, staves, tallow, bark, and silk. The exports consist chiefly of the agricultural produce of the country, with a few articles manufactured from it; to which may be added the produce of the linen manufactures, which is exported to a great extent. The number of merchant ships belonging to the ports of Ireland is estimated at 1500, besides a vast number of small craft engaged in the deep sea fisheries, and in the coasting trade.

Among the many and striking effects of steam navigation, are the changes which it is making in the commercial relations of different parts of the country. While many districts of Ireland are brought, for the purposes of trade, nearer to England and Scotland than to Dublin, a more immediate and less expensive communication is established between that city and many important parts of England, than now exists between it and the counties of Mayo, Sligo, Donegal, and Derry. The manufacturer of Dublin can now send his goods to Devonshire, Cornwall, Dorsetshire, and Somersetshire, with more despatch than the manufacturer of Yorkshire.

The value of the trade of each of the ports, sub-ports and creeks, in the year 1835, is stated by the Railway Commissioners in their second report, as in the following table:—

PORTS, &c.	*Exports.*	*Imports.*	PORTS, &c.	*Exports.*	*Imports.*
BALTIMORE, ineluding Castle Townshend, Glendore, and Ross,	£37,144	£17,767	LIMERICK,	726,430	323,740
Bantry Creek,	6,212	17,293	Clare Creek,	16,617	1,672
Berehaven,	77,360	30,081	Kilrush,	36,158	2,768
BELFAST,	4,341,794	3,695,437	Tralee,	42,315	
Larne Creek,	66,309	7,255	LONDONDERRY,	1,049,918	7,270
Donaghadee,	62,484	7,570	Ballyraine Creek,	20,824	5,770
COLERAINE & PORTRUSH,	105,685	65,900	NEWRY,	616,836	568,711
Ballycastle Creek,	1,791	2,030	Ardglass and Killough,	35,861	2,970
CORK,	2,909,846	2,751,684	Newcastle Creek,	3,681	3,156
Kinsale Creek,	13,479	18,262	Strangford,	79,633	20,498
Youghall,	215,316	28,310	SLIGO,	369,490	124,692
DROGHEDA,	766,027	259,854	Ballina Creek,	70,568	13,532
DUBLIN,	2,528,543	4,430,321	Ballyshannon Creek,	11,130	9,524
Arklow,	3,677	6,762	Donegal Creek,	11,362	11,331
Balbriggan,	5,417	11,391	Killala,	26,396	3,188
Wicklow,	86,565	15,671	WATERFORD,	1,821,245	1,274,154
DUNDALK,	452,813	107,953	ROSS,	59,074	28,007
DUNGARVAN,	69,486	16,312	WESTPORT,	87,805	28,517
GALWAY, ineluding Clifden Creek,	251,864	88,268	WEXFORD,	312,136	621,417
				17,394,813	15,337,097

See also Statistical Tables from page 206 to 216.

ROADS. — The internal traffic of the country is carried on chiefly by roads, which, in respect of direction and mode of construction, are excellent, and are kept in the best state of repair. The only *railroad* is that between Dublin and Kingston, a distance of $5\frac{3}{4}$ miles, which was opened in 1834; but others have been projected, and a public commission has reported upon a general system of railway conveyance throughout Ireland, but no definite arrangement has yet been made respecting them.

INLAND NAVIGATION. — The idea of improving Ireland by means of inland naviga-

tion must be assigned to the unfortunate Earl of Strafford, who had the sagacity to perceive, that the general flatness of the country, and the abundance of lakes, rivers, and bogs, were very favourable to its introduction. Numerous projects for this purpose have been formed, and companies and commissions organized; but hitherto with very limited and imperfect results.

The *Grand Canal* commences near the mouth of the Liffey, where it has floating docks, with 16 feet of water, which are capable of containing 400 sail of ships: with 3 entrance locks, and 3 graving docks. It sweeps round the south side of the city of Dublin westward for 80 miles to the Shannon at Bannagher; and has branches to the Shannon at Ballinasloe, and to the Barrow at Athy. The summit level is 240 feet above the level of the sea, and 160 above that of the Shannon.

The *Royal Canal* extends from the north side of Dublin westward to the Shannon, nearly parallel to the Grand Canal, from which it is seldom more than 10 miles distant, during a great part of its course. It begins on the north side of the Liffey, with which it communicates by a sea-lock, which opens into a floating-dock capable of containing 27 sail of ships, and extends to Longford, a distance of 88 miles, with a summit level of 307 feet above the level of the sea.

The *Newry Canal* is navigable from the tide-way at Fathom to Newry, for vessels of 9 or 10 feet draught, and thence to the Upper Bann, where that river becomes navigable for barges of 60 tons. Where highest it is 65 feet above the level of the sea.

The *Logan Navigation* extends from the tide-way at Belfast, partly in the river, partly by a canal to Lough Neagh, a distance of 20 miles.

The *Tyrone Colliery Canal* extends from Coal-island in Tyrone, for four miles to the Blackwater, and thence by a short cut into Lough Neagh, which thus forms the receptacle for three systems of navigation.

The *Ulster Canal* is intended to connect Lough Neagh and Lough Erne.

By clearing the channel of the Boyne, the river has been made navigable for vessels of considerable burden, as far as Drogheda, four miles from its mouth. The navigation is continued thence by boats in the bed of the river to Slane, and beyond that, by artificial means, 16 miles farther to Navan and Trim. The ascent is 190 feet.

CIVIL DIVISIONS. — Ireland is divided into four provinces, *Leinster*, *Ulster*, *Connaught*, and *Munster*, which are subdivided into 32 principal counties, as stated in the following table. Thirty of the counties are subdivided into baronies, very unequal in extent, of which there are in Leinster, 97; in Ulster, 54; in Connaught, 42; and in Munster, 59. The county of Cavan is divided into hundreds; and Cork is divided into two ridings, named the east and the west, and these are subdivided into hundreds. Parishes likewise form both civil and ecclesiastical divisions, but their limits do not always correspond with those of the counties and baronies; some of them extending not only into different baronies, but even into different counties. The following table contains a list of the counties, the baronies, and principal towns:—

Counties.	*Baronies, Hundreds, Cities and Towns.*
	PROVINCE OF LEINSTER.
CARLOW.	— *Baronies:* Carlow, Forth, East Idrone, West Idrone, Rathvilly, St. Mullins. *Towns:* Carlow, Tullow, Old Leighlin, Rathvilly, Hacketstown.
DUBLIN.	— *Baronies:* Balrothery, Castleknock, Coolock, Donore, Nethercross, Newcastle, Rathdown, St. Sepulchre's, Upper Cross. *Towns:* DUBLIN, Lucan, Dunleary or Kingstown, Howth, Swords, Finglas, Lusk, Rush, Balbriggan, Newcastle.
KILDARE.	— *Baronies:* Carbery, Claine, Connell, Skeathy and Oughteraney, Kilcullen, Kilkea and Moone, North Naas, South Naas, Narragh and East Rheban, Narragh and West Rheban, East Ophaly, North Salt, South Salt. *Towns:* Kildare, Naas, Maynooth, Leixlip, Cellbridge, Clonecurry.
KILKENNY.	— *Baronies:* Gowran, Fassadinan, Galmoy, Cranagh, Shillelogher, Kells, Knocktopher, Iverk, Ideagh; City of Kilkenny. *Towns:* Kilkenny, Castlecomer, Thomastown, Inistiogue, Knocktopher, Callen, Urlingford, Freshford, Durrow, Gowran.
KING'S COUNTY*	— *Baronies:* Ballyboy, Ballybut, Ballyeullen, Birr, Clonlisk, Coolestown, Eglish or Fireal, Garryeastle, Geashill, Killeoursey, Upper Philipstown, Lower Philipstown, Warrenestown. *Towns:* Tullamore, Philipstown, Edenderry, Portarlington, Clara, Birr, Banagher.
LONGFORD.	— *Baronies:* Abbeyshruel, Ardagh, Granard, Moydow, Ratheline. *Towns:* Longford, Edgeworthstown. Granard, Lanesborough, Ballymahon, Newtown-Forbes, Johnstown.
LOUTH.	— *Baronies:* Ardee, Upper Dundalk, Lower Dundalk, Ferrard, Louth. *Towns:* Dundalk, Clogher, Collon, Dunleer, Ardee, Castle Bellingham, Louth, Carlingford.
MEATH.	— *Baronies:* Upper Deece, Lower Deece, Upper Demifore, Lower Demifore, Dunboyne, Upper Kells, Lower Kells, Lune, Morgallion, Upper Moyfenrath, Lower Moyfenrath, Upper Navan, Lower Navan, Ratoath, Skryne, Upper Slane, Lower Slane. *Towns:* Trim, Navan, Dunleek, Athboy, Slane, Ratoath, Kells.
QUEEN'S COUNTY.	*— *Baronies:* Ballyadams, Cullinagh, East Maryborough, West Maryborough, Portnahinch, Slewmargy, Stradbally, Mountmellick, Graigue, Rathdowney. *Towns:* Maryborough, Mountmellick, Mountrath, Abbeyleix, Ballyroan, Ballynakill, Stradbally.
WESTMEATH.	— *Baronies:* Demifore, Moygeesh, Corkerry, Moyashell, Magharedernon, Delvin, Farbill, Ratheonrath, Kilkenny West, Brawney, Clonlonan, Moyeashel, Fertullagh. *Towns:* Mullingar, Athlone, Killbeggan.
WEXFORD.	— *Baronies:* Ballaghkeen, Bantry, Bargie, Forth-Gore, Searewalsh, Shelburne, Shelmalier. *Towns:* Wexford, New-Ross, Newton-Barry, Gorey or Newborough, Enniscorthy, Taghmon, Clonminess, Ferns, Fort-Duncannon.
WICKLOW.	— *Baronies:* Arklow, Ballynaeor, Newcastle, Rathdown, Shillelagh, Upper Talbotstown, Lower Talbotstown. *Towns:* Wicklow, Arklow, Rathdrum, Bray, Baltinglas, Carnew, Stratford, Donard, Blessington, Aghrim.
DROGHEDA.*	— *Town* of Drogheda.

* King's County and Queen's County were formed in the 16th century out of the ancient province of *Ossory*. The town and territory of Drogheda form a separate county, situate between Louth and Meath, but quite distinct from both.

PROVINCE OF ULSTER.

ANTRIM.—*Baronies:* Upper Antrim, Lower Antrim, Upper Belfast, Lower Belfast, Carey, Upper Dunluce, Lower Dunluce, Upper Glenarm, Lower Glenarm, Kilconway, Upper Massareene, Lower Massareene, Upper Toome, Lower Toome. *Towns:* Carrickfergus, Belfast, Lisburn, Antrim, Randalstown, Ballymena, Port Glenone, Ballymoney, Port Rush, Bushmills, Larne, Ballycastle, Glenarm.

ARMAGH.—*Baronies:* Upper Fewes, Lower Fewes, Upper Orior, Lower Orior, East O'Neiland, West O'Neiland, Armagh, Turancy. *Towns:* Armagh, Charlemont, Lurgan, Portadown, Tandera-agee, Markethill, Newry, Keady.

CAVAN.—*Hundreds:* Tullagha, Tullaghonoho, Clonmoghan, Upper Loughtee, Lower Loughtee, Castleraghan, Clonchee, Tallaghgarry. *Towns:* Cavan, Bellturbet, Cootchill, Baileyborough, Ballyconnel, Virginia.

DONEGAL.—*Baronies:* Banagh, Boylach, Inishowen, Kilmacreenan, Raphoe, Tyrhugh. *Towns:* Lifford, Stranorlay, Donegal, Ballyshannon, Killybeggs, Buncrana, Carndonagh, Raphoe, Rathmelton, Pettigoe.

DOWN.—*Baronies:* Ardes, Castlereagh, Dufferein, Upper Iveagh, Lower Iveagh, Kinclearty, Lecale, Mourne, and *lordship* of Newry. *Towns:* Downpatrick, Ardglass, Castlewellan, Rathfryland, Banbridge, Dromore, Hillsborough, Moira, Ballynahinch, Newton-Ards, Bangor, Donaghadee, Portaferry.

FERMANAGH.—*Baronies:* Clonkelly, Coole, Glenawley, Knockninny, Lurg, Magheraboy, Magherastephana, Tyr-Kennedy. *Towns:* Enniskillen, Irvinestown, Bellanamallard, Newtown-Butler.

LONDONDERRY.—*Baronies:* Half Coleraine, town and liberties of Coleraine, Kenaught, Derry city and liberties, Loughinsholin, Tyrkeeran. *Towns:* Derry, Coleraine, Dungiven, Garvagh, Kilrea, Maghera, Magherafelt, Strabane, Newton-Limavady.

MONAGHAN.—*Baronies:* Cremourne, Dartry, Farney, Monaghan, Trough. *Towns:* Monaghan, Glasslough, Clones, Ballybay, Castleblaney.

TYRONE.—*Baronies:* Clogher, Dungannon, Omagh, Strabane. *Towns:* Omagh, Dungannon, Auchnacloy, Ballygawley, Clogher, Fintona, Castle-Derg, Newton-Stewart.

PROVINCE OF CONNAUGHT.

GALWAY.—*Baronies:* Arran, Athenry, Ballymoe, Ballynahinch, Clare, Clonmacnoon, Dunkellin, Dunmore, Kilconnel, Killian, Kiltartan, Leitrim, Longford, Loughrea, Moycullen, Ross, Tyaquin. *Towns:* Galway, Athenry, Aughrim, Ballinasloe, Cyrecourt, Loughrea, Gort, Castle-Blakeney, Tuam, Dunmore, Headford.

LEITRIM.—*Baronies:* Canigallon, Dromahaire, Leitrim, Mohill, Rossclogher. *Towns:* Carrick-on-Shannon Leitrim.

MAYO.—*Baronies:* Burrishoole, Carra, Clanmorris, Costello, Half Erris, Gallen, Kilmaine, Morisk, and Tyrawly. *Towns:* Castlebar, Newport, Westport, Kilalla, Ballina, Foxford, Ballinrobe.

ROSCOMMON.—*Baronies:* Athlone, Ballymore, Ilan, Boyle, Ballintobber, Moycarne. *Towns:* Roscommon, Elphin, Loughglin, Castlerea, Boyle, Mount-Talbot.

SLIGO.—*Baronies:* Carbury, Corran, Coolavin, Leney, Tyreragh, Tyraghrill. *Town:* Sligo.

PROVINCE OF MUNSTER.

CLARE.—*Baronies:* Burralley, Burren, Clonderlaw, Corcomroe, Ibrickane, Inchiquin, Islands Moyarta and Tulla. *Towns:* Ennis, Kilrush, Killaloe, Clare.

CORK.*—*Hundreds:* Bantry, Barretts, Barrymore, Bere, East Carberry, West Carberry, Condons and Clongibbons, Courceys, Duhallow, Fermoy, Ibane and Barryroe, Imokilly, Kerricurriky, Kinnalea, Kinnalmeaky, Kinnataloon, Kinsale, East Muskerry, West Muskerry, Orrery, and Kilmore. *Towns:* Cork, Passage, Cove, Middleton, Cloyne, Youghall, Kilworth, Mitchellstown, Fermoy, Doneraile, Buttevant, Mallow, Kanturk, Millstreet, Macroom, Bantry, Dunmanway, Skibbereen, Castle Townshend, Baltimore, Ross-Carberry, Clonakilty, Bandon, Kinsale, Rathcormac.

KERRY.*—*Baronies:* Clanmaurice, Corkaquiney, Dunkerron, Glanerought, Iraghticonnor, Iveragh, Magunihy, Trughenackmy. *Towns:* Tralee, Ardfert, Listowel, Tarbert, Dingle.

LIMERICK.—*Baronies:* Clanwilliam, Upper Connello, Lower Connello, Coonagh, Coshma, Costlea, Kerry, Owneybeg, Pubblebren, Small County. *Towns:* Limerick, Askeaton, Rathcale, Newcastle, Bruff, Kilmallock.

TIPPERARY.—*Baronies:* Clanwilliam, Eliogarty, East Iffa and Offa, West Iffa and Offa, Ikerin, Kilnemanagh, Middlethird, Upper Ormond, Lower Ormond, Owney and Arra, Sliebhardagh. *Towns:* Clonmel, Carrick-on-Suir, Cahir, Clogheen, Tipperary, Cashel, Fethard, Killenaule, Thurles, Roscrea, Nenagh, Goldenbridge.

WATERFORD.—*Baronies:* Coshbride, Cosmore, Decies-within-Drum, Decies-without-Drum, Gualtier, Glenahiry, Middlethird, Upper Third. *Towns:* Waterford, Passage, Tramore, Dungarvan, Tallow, Lismore, Cappoquin.

ECCLESIASTICAL DIVISIONS. — Till lately the ecclesiastical division of Ireland was framed on the same principle as the civil, but under different names, and with different boundaries. There were four archbishoprics: *Armagh*, *Dublin*, *Cashel*, and *Tuam*, one for each of the four provinces. The number of bishops subject to each of these varied at different periods; and two or more sees were frequently united, to afford a revenue sufficient to maintain the dignity of the incumbent. According to the latest arrangement, there are to be but two archiepiscopal provinces, viz. Armagh and Dublin; and the former archiepiscopal and episcopal dioceses are to be consolidated into twelve dioceses, namely, two archbishoprics and ten bishoprics, instead of eighteen as heretofore.

TABLE OF ECCLESIASTICAL DIVISIONS.

Provinces.	*Dioceses.*
ARMAGH.	—*Armagh and Clogher;* Meath; Derry and Raphoe; Down, Connor, and Dromore; Kilmore, Ardagh, and Elphin; Tuam, Killala, and Achonry.
DUBLIN.	—*Dublin, Glandelagh, and Kildare;* Ossory, Leighlin, and Ferns; Cashell, Emly, Waterford, and Lismore; Cloyne, Cork, and Ross; Killaloe, Kilfenora, Clonfert, and Kilmacduagh; Limerick, Ardfert, and Aghadoe.

* Cork and Kerry anciently formed the province or county of *Desmond*.

Cities and Towns.

Dublin, the capital of Ireland, is situate at the bottom of a bay, near the middle of the east coast of the island, in N. lat. 53° 20′, and W. long. 6° 17′; 334 miles N.W. of London, by Holyhead. It occupies a plain on both sides of the Anna-Liffey (Swift River), near its mouth; and its public buildings, spacious streets, and beautiful squares, which are surrounded by numerous splendid mansions, are sufficient to establish its reputation as one of the finest cities in Europe. *Sackville Street* is considered the noblest street in Europe, both on account of its great width, and the houses of which it consists. *Stephen's Green*, the largest square, not only in Dublin but in the United Kingdom, exceeds a mile in circumference, and is enclosed by a handsome light iron railing, resting on a dwarf wall of cut granite, with an outer terrace separated from the carriage way by stone pillars and chains; while the surrounding mansions, though unequal in their architectural merit, are not exceeded by any private residences in London. The public buildings are of the first class, in point of design, size, and elegance of workmanship. The *Castle*, the residence of the Lord Lieutenant, stands upon a slight eminence to the south of the river, and contains a splendid suite of state apartments, besides ample accommodation for the offices of Government, and an elegant chapel lately built, in the florid Gothic style. The *Bank of Ireland*, in College Green, is a very fine building, erected for the sittings of the Irish Parliament; and on the opposite side of the same street, *Trinity College*, the University of Dublin, presents a magnificent front of 300 feet, behind which is a large mass of building, arranged in four squares, and a fine park. The *Law Courts* form likewise a large and majestic structure, surmounted by a dome, which is an important feature in the distant view of the city. The *Custom-House*, near the mouth of the river, is also one of the chief ornaments of the city, and consists of four fronts, of which the two principal extend 375 feet, and the others 209, with a beautiful dome in the centre of the south or river front. Besides these, there are many other public buildings of imposing magnitude and graceful structure; as the *Post-Office*, in Sackville Street, the new *College of Surgeons*, the *Royal Exchange*, *St. George's Church*, the *Lying-in Hospital*, *Leinster-House*, and the *Royal Irish Academy*. The metropolitan *Roman Catholic Cathedral*, of the pseudo-Grecian style, is not remarkable either for its style of architecture or elegance of design. To these we may add the six elegant *Bridges* which cross the river, within the city; the *Wellington Testimonial*, in the Phœnix Park, a huge obelisk, 220 feet high, with an equestrian statue of the Noble Duke in front; and *Nelson's Pillar*, in Sackville Street, in the usual fashion of monumental columns, surmounted by a statue of the hero.

The city is divided into 18 parishes, in each of which there is a church; and besides the parochial churches, the establishment possesses two ancient cathedrals, *St. Patrick's* and *Christ Church*. The former is renowned for its Dean (Swift), and, from the number of its monuments, is considered as the Westminster Abbey of Ireland. There also many Roman Catholic chapels, both parochial and monastic, some of which are well built and spacious, and one of them, *St. George's*, is a beautiful structure in the Gothic style.

The only *University* in Ireland is that of Dublin, founded by Queen Elizabeth in 1591, which contains one college; the number of students is about 2000, and the course of study extensive and valuable. It is governed by a provost, fellows, and scholars. There is also a *College of Physicians*, and a *Royal College of Surgeons*, established in 1784, which consists of six professors, a court of examiners and various other officers. Literature of every kind is much cultivated by the inhabitants, and for its advancement, in conjunction with other objects, the *Dublin Royal Society* was established in 1749.

The *Royal Hibernian Academy* was incorporated in 1823, where exhibitions of paintings and sculpture take place annually; and collections of the works of ancient masters are exhibited every year by the *Royal Irish Institution*, at their gallery in College Street. Besides these, Dublin contains many other literary and scientific societies and institutions, and numerous charitable establishments of every description. In no city in the kingdom are the offices of charity more necessary; for the contrast between the higher and lower classes is very marked, and nowhere do destitution and misery more extensively prevail.

The trade of Dublin is varied and extensive. As a place of exportation it is rising in importance daily, and will probably become the chief corn-market in the kingdom. Cattle and hides are also exported in great quantities; and Dublin porter has lately risen to high repute, and is imported in considerable quantities into the west and South of England, and also into Scotland. The river, however, forms only a tide-

harbour, and is obstructed at its mouth by sand-banks, which extend far out to sea; so that large ships can scarcely approach the noble docks which have been constructed for their accommodation. To remedy this inconvenience, an immense pier has been carried out into the bay, for not less than five miles, where it is nearly met by a breakwater from the north shore, but without producing much effect; and an asylum harbour, capable of admitting the largest vessels, has at length been constructed at *Dunleary*,* on the south-east side of the bay, and is now connected with the city by a railroad. Two canals, the "Grand," and the "Royal," extend from the Liffey to the Shannon, by means of which the agricultural produce of the country is brought to Dublin at a small expense, and there shipped for the English market. The population of the city, within its new Parliamentary limits, amounted, according to the census of 1831, to 248,310.

LEINSTER †:—*Kildare*, a small episcopal city, 32 miles S.W., has but little to recommend it to notice, as it contains but one tolerable street. *Kilkenny*, 75 miles S.W., an ancient city, pleasantly situated on the banks of the Noir, which is here crossed by two handsome bridges. The general appearance of the place is highly respectable, and though not the largest, it is decidedly the best of the second class of towns in Ireland—Population, 23,740. *Carlow*, 49 miles S.W. by S., is a remarkably neat and thriving town, and contains an elegant court-house and spacious jail, barracks, church, a magnificent Roman Catholic cathedral, a Catholic college, a nunnery, a large market-house, several good inns, many excellent private residences, breweries, distilleries, and flour-mills—Population, 9,012. *Naas*, 19 miles S.W. upon the Liffey, consists of one broad street, with a handsome sessions-house, a county jail, several respectable residences, a Roman Catholic chapel, a market-house, and a spacious and well conducted inn. *Athy*, 40 miles S.W., is situate on the banks of the Barrow; by means of which, and a branch canal that connects it with the Liffey, the inhabitants carry on a considerable trade. *Castlecomer*, 70 miles S.W., is a small but handsome town, consisting principally of one broad street, enclosed by well built houses. *Philipstown*, 60 miles S.W., derived its name from Philip II. King of Spain, the husband of Queen Mary, and was formerly the capital of King's County, and a borough; but the assizes have been removed to Tullamore, and by the act of union the town was disfranchised. *Tullamore*, 63 miles W. by S., is a handsome, neat, and regularly built market-town, with an improving, comfortable, and respectable appearance. The cotton manufacture is now firmly established, and the linen trade is likewise on a secure footing; and, by means of the Grand Canal, the town carries on a considerable trade. *Birr*, 86 miles W.S.W., a well-built town, with a large square in the centre, containing a Doric column, with a statue of William Duke of Cumberland, the son of King George II. Few inland towns in Ireland are equally thriving. *Banagher*, 81 miles W.S.W., a small town, with permanent barracks and fort, situate on the Shannon, which is here crossed by a bridge of 19 arches. *Longford*, 74 miles W., a small inland town, and a permanent military station. *Granard*, 75 miles W.N.W., a small town, and a military station, with a remarkable rath, on the summit of which there formerly stood a fort or castle. *Edgeworthstown*, 66 miles W.N.W., a neat and tastefully disposed small town. *Drogheda*, 30 miles N., a large irregularly built town, situate on the Boyne, a mile from the sea. The town occupies both banks of the river, which are steep, and are connected by an old narrow bridge. It is one of the principal corn markets of Ireland, and has an extensive export trade in corn, hides, butter, and all kinds of raw produce. Breweries and tanneries are established along the river; but dowlas is at present the staple manufacture. St. Peter's Church is an elegant building, situate on an eminence, and adorned with a beautiful spire—Population, 17,365. *Dundalk*, 51 miles N., a handsome and improving town, with a large trade in the exportation of agricultural produce, and a safe harbour, occupying an area 9 miles square. Here is a long established manufactory of muslin and cambric; and salt, soap, and leather, are made on a large scale—Population, 10,078. *Carlingford*, 75 miles N., a small sea-port town, on a spacious inlet. *Trim*, 32 miles N.W. by W., an irregularly built small town, with many comfortable houses, situate on the banks of the Boyne, in the midst of a level, productive, and populous district. *Navan*, 30 miles N.W., a good market-town, with two broad streets at the junction of the rivers Boyne and Blackwater, and near the canal called the Boyne Navigation. *Maryborough*, 51 miles S.W., a small town on the Barrow, the capital of Queen's County—Population, 2,677. *Portarlington*, 44 miles W.S.W., a handsome town on the Barrow, with many spacious and elegant buildings, and several respectable private academies. *Mullingar*, 48 miles W. by N., the capital of Westmeath, a small town nearly in the centre of Ireland, and possessing one of the best cattle fairs. *Athlone*, 75 miles W. by N., consists of two towns on the opposite sides of the Shannon, connected by an ancient but well built bridge. It is well situate for trade, and is a strong military post, having fortifications which command the passages of the river at all points; barracks for 2000 men, and an armoury containing 15,000 stand of arms—Population, 6161. *Wexford*, 94 miles S., an irregularly built town, with narrow and inconvenient streets, situate on the Slaney, where the river enters the sheltered haven of Wexford. It possesses an extensive and convenient quay and a wooden bridge across the river 2,100 feet in length. *New-Ross*, 88 miles S.S.W, a well-built, handsome, and improving town, on the Barrow, which is here deep enough to float up to the town at high water vessels of 500 tons burden. The river is lined by extensive quays, backed by ranges of lofty warehouses; and a great trade is carried on in the exportation of agricultural produce, of which wool is the staple—Population, 6,284. *Enniscorthy*, 82 miles S.W., is a good market-town, at the head of the navigation of the Slaney, which admits barges of 20 tons. *Wicklow*, 32 miles S., a paltry town at the mouth of the river Leitrim. *Arklow*, 49 miles S. by E., a sea-port town, delightfully situate on the south bank of the Oroca, near its mouth, which is here crossed by a bridge of 19 arches. *Swords*, 9 miles N., a small town, with a spacious church, and a permanent military station. *Leixlip*, 10 miles W., a large and pleasant village, with a cheerful and respectable appearance. *Maynooth*, 15 miles W. by N., a regularly built town, contains several handsome houses, and the Royal College of St. Patrick, established and supported by Government for the education of Roman Catholic priests. The number of students is about 330. *Donnybrook*, a village on the Dodder, 2½ miles S. of Dublin, celebrated for its fair, which is usually attended by a riotous assemblage of people.

ULSTER.—*Armagh*, 82 miles N. by W. the ecclesiastical metropolis of Ireland, stands on the slope of a hill, the top of which is crowned by the cathedral, a large gothic structure. It contains a handsome county court-house, the archbishop's palace, an observatory, and a public infirmary. Linen is extensively manufactured in the town and neighbourhood; and the weekly sales of that article on the market-day are very large—Population, 9,470. *Belfast*, 102 miles N. is considered as the third town in Ireland in respect of size and wealth, and is more rapidly advancing in commercial importance than any other in the kingdom. It is situate at the head of Belfast Lough at the mouth of the river

* Called *Kingston*, since King George IV. landed there in 1821.
† The distances in miles are all from Dublin, unless where otherwise expressed.

Lagan, and contains many regular and handsome streets, two well-finished squares, and several public buildings. It has a prosperous trade in grain; and a direct trade in cotton and wool with North America, the West Indies, Holland, and the Mediterranean, as well as considerable intercourse with Scotland and Liverpool. Linen is manufactured to a great extent, and vast quantities of this article are exported; but the cotton trade seems now to have spread itself most extensively in the vicinity. There are also factories of glass and vitriol, potteries, sugar refineries, breweries, and distilleries. The navigation of the lough is intricate but not dangerous; and the town has also a navigable communication with Lough Neagh. The principal seminary of education is the *Belfast Academical Institution*, founded in 1810; built by subscription, and supported by the fees from pupils and an annual grant from Parliament. It possesses somewhat of a collegiate character, and has professors of all branches of science and literature. The bridge over the Lagan consists of 21 arches, and measures 2562 feet in length—Population, 44,770. *Antrim*, 105 miles N. a small town on a pleasant situation near the north-east corner of Lough Neagh. The linen manufacture affords employment to about half of its inhabitants. *Carrickfergus*, 110 miles N. by E., an irregularly built town on the north side of Belfast Lough, contains a good market-house, an ancient cross church, a county court-house, and an old and noble castle, now garrisoned, and used as a military depot. *Cavan*, 68 miles N.W., a fine town with an agreeable appearance, and possessing an elegant court-house, and a small but substantial county jail. *Cootehill*, 74 miles N.N.W., the principal market-town in the county of Cavan, and one of the largest linen markets in Ulster. *Derry*, 150 miles N. by W., also called *Londonderry*, a fine city built on a high conical hill which overhangs the river Foyle, the summit of which is crowned by the cathedral. Its situation upon a broad and navigable river naturally marks it out as a place of commercial importance. Vessels of large burden can lie at the quays, and barges of 40 tons navigate the river above the city. West Indian and American produce for the supply of a large district is imported, and a brisk trade is carried on with Scotland and Liverpool, principally by means of steam ships—Population, 14,030. *Coleraine*, 160 miles N., is a neat and respectable town, on the east bank of the river Bann, and one of the principal markets for the linen manufactures of Ulster—Population, 5,752. *Lifford*, the capital of the county of Donegal, stands on the banks of the Foyle. *Ballyshannon*, 127 miles N.N.W., a small town with a harbour of difficult access, at the outlet of Loch Erne. *Downpatrick*, 93 miles N.E., is believed to be one of the most ancient towns in the kingdom, and said to have been erected into a bishopric by St. Patrick, from whom it derives its name. It has a brisk linen market, and maintains a constant export trade in agricultural produce. *Newry*, 63 miles N., a clean and prosperous town, with a considerable trade. Besides manufactories of various articles for home consumption, there are extensive linen and cotton works; and large quantities of manufactured articles from the inland counties are here exported. Beef, pork, grain, and live cattle are also shipped for the English market, and coals and flax-seed are imported in return—Population, 13,369. *Lisburn*, or *Lisnagarry*, 93 miles N. by E. a handsome and prosperous town on the Laggan—Population, 6,201. *Donaghadee*, 122 miles N. and 21 miles S.W. of Port-Patrick in Scotland, contains some tolerable streets, and is adorned with a handsome church, four meeting houses, and a Roman Catholic chapel. Its chief importance, however, is derived from its harbour, which is the regular station of the mail packets between Ireland and Scotland. *Enniskillen*, 100 miles N.N.W., a well built thriving town, on an island, between the upper and lower expansions of Lough Erne — Population, 6,796. *Monaghan*, 84 miles N. by W., an irregularly built town, with an excellent linen market, and a considerable traffic in small wares. *Omagh*, 116 miles N. by W. a small town of respectable appearance, with a good linen market, and some country trade. *Strabane*, 136 miles N.N.W., a thriving market-town on the river Morne, at the head of a navigation which communicates with Lough Foyle. *Dungannon*, 96 miles N.W., a handsome town with a brisk linen market, and a classical school, endowed by King Charles I. with 1,600 acres of land.

CONNAUGHT — *Tuam*, 126 miles W. by N., a handsome and prosperous inland town, built on a regular plan, in a low but healthy situation. It is the see of an archbishop, the primate of Connaught, whose palace forms an interesting feature in the prospect. The cathedral is small, but is adorned with a tower and spire. *Galway*, 133 miles W., is a large and flourishing town of great antiquity, at the north-east corner of Galway bay. It has a prosperous trade and considerable manufactures, and new quays and convenient docks have been lately finished—Population 33,120. *Loughrea*, 109 miles W. by S., is a small town in an agreeable situation on the banks of Lough Rea, and a permanent military station. Vast quantities of oats are sold here and carried to Galway for exportation. The linen manufacture, brewing, and tanning, are advantageously carried on to a considerable extent. *Carrick-on-Shannon*, 98 miles N.W. by N., the assize town of Leitrim, possesses a court-house, jail, and permanent barracks. *Castlebar*, 150 miles W.N.W., a remarkably neat, well built, and improving town, is the assize town of Mayo. *Westport*, 170 miles N.W., is a prosperous seaport town on Clew bay. *Killala*, 192 miles N W., is a small town, though the seat of a bishop's see. In 1798, a body of French troops under General Humbert were landed here, and kept possession of the town for 30 days. *Roscommon*, 95 miles N.W., a small town, is the capital of county Roscommon. *Elphin*, 102 miles W.N.W., a small town and the seat of a bishop's see, is said to have been founded by St. Patrick. *Sligo*, 132 miles N.W., is a prosperous seaport town on the river Garrow, which flows from the beautiful lake of Gill, and falls into Sligo bay below the town. It is one of the principal towns in Connaught, and is daily advancing towards commercial importance—Population, 12,762.

MUNSTER. — *Cork*, 160 miles S. by W., the second city of Ireland, is situate on the river Lea, which is navigable for vessels of 150 tons as far as the Parliament Bridge. It possesses many good streets and numerous public buildings; among which are a cathedral, an exchange, corn-market, court-house, custom-house, jail, theatre, and barracks for the accommodation of 4000 infantry, and 1000 cavalry. The trade is considerable: the principal business is the export of provisions, and other agricultural produce; and steam-packets ply regularly to and from Bristol. Sail-cloth, coarse sheeting, coarse woollen, paper, leather, and superior glass, are manufactured. The harbour is at Cove, a flourishing and agreeable town, 11 miles from the city; and the intervening banks of the river are adorned with noble mansions and graceful villas. — Population of the city and suburbs, 85,016, and of the liberties 22,000, making altogether 107,016. *Kinsale*, 186 miles S.W., situate on the river Bandon, at the extremity of a narrow, deep, and well sheltered estuary, presents a respectable appearance, as well from the number and extent of its streets, as from the character of antiquity that belongs to it. Kinsale has little trade; but carries on a great fishery, in which upwards of 400 vessels of about twenty tons burden are constantly employed — Population, 6,897. Below the town is Charles Fort, a strong fortress which completely commands the harbour. *Mallow*, 163 miles, S. by W., is a small town, with many respectable houses, on the banks of the Blackwater, situate in a country of great beauty and fertility. *Youghall*, (pronounced *Yoll* or *Yawl*), a town of considerable extent on the estuary of the Blackwater, where large quantities of grain are shipped; but in consequence of a bar at the entrance of the harbour, which denies admission to large vessels, the traffic of the port is reduced to a mere coasting trade. *Bandon*, or *Bandonbridge*, 186 miles S.W., is a large town on the Bandon, and a permanent military station. It has manufactures of cotton, linen, cambletts, and stuffs, with breweries, tanneries, dyeing establishments, and cotton-mills; and near the town is a famous chalybeate spring—Population, 9,829. *Tralee*, 187 miles S.W. by W., the capital of Kerry, is situate on the river Lee, near its mouth in Tralee Bay. The town is built on a tolerably regular plan—Population, 9,552. *Ardfert*, near Tralee, is a small episcopal city the diocese of which, now

annexed to Limerick, includes the whole county. *Killarney*, 224 miles S.W., a town in Kerry, 1 mile from the celebrated lakes, consists of two excellent broad streets, besides several which are smaller, and presents a clean and cheerful appearance. *Limerick*, 119 miles S.W., an ancient city and the seat of a bishop's see, on the Shannon, 97 miles from its mouth, stands partly on an island, and partly on the banks of the river, which are connected by bridges. The city still retains some appearance of antiquity. New quays have been constructed; convenient streets have been opened; and improvement and prosperity have advanced simultaneously. The cathedral is a venerable pile, founded and endowed by Donald, king of Limerick, in the 12th century. The trade of the city is various and extensive; linen, woollen, cotton, and paper are manufactured; breweries, distilleries, saltworks, tanneries, and glove manufactories are permanently established, and afford constant employment to the inhabitants. The imports consist chiefly of coal and turf, timber, rum, sugar, tobacco, and other foreign and British articles of necessity or luxury; the exports are chiefly of agricultural produce, vast shipments being annually made of rape-seed, oats, wheat, butter, bacon, pork, and beef; besides linen cloth and yarn. Vessels of 400 tons can ride at the quay; the navigation of the Shannon to its mouth is unobstructed and secure; and the inland navigation, by means of the upper part of the river and canals, greatly contributes to the prosperity of the city—Population, 44,100; and including the county of the city, an extensive rural district, 66,775. *Clonmel*, 123 miles S.W. by S., is situate on the river Suir, which is navigable for barges from this place to Carrick and Waterford. The town consists of several good streets, with a market-house, court-house, gaol, church, chapel, and other public buildings, and has a handsome bridge of 20 arches over the Suir.—Population, 12,256. *Cashel*, 100 miles S W. is an ancient archiepiscopal city, about 4 miles from the Suir, situate in an open and fertile country. The ancient cathedral, which stands upon the rock of Cashel, and is still capable of restoration, is the largest and most remarkable ecclesiastical ruin in Ireland. The city was formerly the capital of the kings of Munster, and the see of an archbishop; but is now only a bishopric, conjoined with those of Waterford, Lismore, and Emly — Population, 6,791. *Cahir*, 112 miles S.W. is a handsome and improving town on the Suir, with permanent barracks. *Carrick-on-Suir*, 110 miles S.S.W. is a large and populous but irregularly built market town, on the Suir, which maintains a great carrying trade with Waterford by means of the river. Here are tanneries, breweries, a manufactory of ratteens; and a stately castle, within a beautiful and extensive park, the property of the ancient family of Butler. *Waterford*, 94 miles S.S.W., is an episcopal city on the south bank of the Suir, and one of the most prosperous ports in the kingdom, for which it possesses singular natural advantages. Vessels o 500 tons can lie safely in deep water at the quay, 12 miles from the sea. It has a considerable foreign and coasting trade; and exports immense quantities of live stock and agricultural produce. About 5000 swine are slaughtered weekly; and nearly 100,000 casks of butter are annually exported; and it is not unusual to see the quay, nearly a mile long, completely occupied by live stock in readiness for embarkation—Population, 28,821. *Lismore*, 136 miles W. by S., is a small town, which has been considerably improved of late by its proprietor the Duke of Devonshire, who possesses the extensive estates of the first Earl of Cork in this and the neighbouring county; and whose principal agent inhabits the castle of Lismore, an ancient building, now in complete repair. The castle once belonged to the famous Sir Walter Raleigh. *Dungarvon*, 122 miles S.S.W, is a populous and thriving seaport town, with a spacious barrack, and a fine quay. The fishery carried on here is extremely profitable, and the export trade in butter and potatoes constant and considerable—Population, 8381.

PARLIAMENTARY REPRESENTATION. — By the Articles of Union with Great Britain in 1801, it was stipulated that Ireland should be represented in the Imperial Parliament by one archbishop, three bishops, and twenty-eight temporal peers in the House of Lords, and 100 members in the House of Commons. By the Reform Act in 1832, the latter number was increased to 105; of whom 64 are elected by the counties, two by the University of Dublin, and 39 by the cities and burghs mentioned in the following list; Dublin, Cork, Belfast, Limerick, Galway, and Waterford having two each; the other towns only one.

LIST of the PARLIAMENTARY CITIES and BOROUGHS of IRELAND, with their POPULATION, according to the Census for 1841.

Armagh,	10,245	Drogheda,	19,260	Lisburn,	7,524
Athlone,	6,393	Dublin,	238,531	Londonderry,	15,150
Bandon,	8,275	Dundalk,	10,782	Mallow,	6,851
Belfast,	63,625	Dungannon,	3,801	Newry,	13,227
Carlow,	10,409	Dungarvan,	12,382	Portarlington,	3,106
Carrickfergus,	9,379	Ennis,	9,318	New Ross,	7,543
Cashel,	8,027	Enniskillen,	5,686	Sligo,	14,318
Clonmel,	13,505	Galway,	32,511	Tralee,	11,363
Coleraine,	6,255	Kilkenny, and Liberties,	23,625	Waterford,	29,288
Cork, and Liberties,	106,055	Kinsale,	6,918	Wexford	11,252
Downpatrick,	4,866	Limerick (City & Liberty)	65,296	Youghal,	9,939

ANTIQUITIES. — Ireland contains some interesting antiquities, which may be classed under two great divisions—*Pagan* and *Christian*. Of the former, the Round or Pillar Towers are the most remarkable. These are tall, slender, circular buildings, generally from 40 to 50 feet in external circumference at the base, and rising to a height exceeding 100 feet. When perfect, they terminate in a conical roof, with four small windows near the top, generally looking to the cardinal points; the door is usually from 8 or 10 to 16 feet above the ground, and some of them exhibit projections for four or five floors. The sites of 118 of these peculiar buildings have been discovered. Of several of these, however, only the foundations remain, while of others more or less of the building has been preserved. Only 18 are found entire, or nearly so, and retain the conical roof: — viz. at Antrim; Ardmore, in Waterford; Cashel, in Tipperary; Clonmacnoise and Sier Kieran, in King's County; Clones, in Monaghan; Devenish, in Fermanagh; Fertagh, in Kilkenny; Glendalough, in Wicklow; Kildare; Kilkenny; Kilmacduagh, in Galway; Monasterboice, in Louth; Roscrea, in Tipperary; Swords, in Dublin; Timahoe, in Queen's County; Trummery, in Antrim; and Furlough, in Mayo. Their origin and the purpose for which they were intended, are quite unknown; but the most probable opinion is, that they were connected with the worship of Baal, or the Sun, in the pagan days of Ireland. Altars, commonly called *Brehon's Chairs*, circular rings of huge pillar stones; rocking stones; cromleachs; and cairns are to be found in several places; Danish *raths*, or moats occur everywhere. The Christian antiquities consist of monasteries, churches, chapels, cells, forts, and castles; but none of these require particular notice in a work of this kind.

TABULAR VIEW OF THE BRITISH EMPIRE.

I. UNITED KINGDOM OF GREAT BRITAIN AND IRELAND.

1. ENGLAND AND WALES.

ENGLAND. Counties.	Area in sq. miles.	Popul^n. in 1841.	Cities and Towns.
Bedford, ...	463	107,936	*Bedford*, 8. Biggleswade, 3. Luton, 5. Rickmansworth, 5. Leighton Buzzard, 3. Dunstable, Woburn, 2. Ampthill.
Berkshire, ...	752	161,147	*Reading*, 18. Abingdon, 5. Windsor, 9. Newbury, 6. Sandhurst, 2. Wantage, 3. Farringdon, Wallingford, 7. Maidenhead, Workingham.
Buckingham, ...	738	155,983	*Buckingham*, 7. Newport-Pagnel, 3. Eton, 3. Slough, Great Marlow, 6. Aylesbury, 56. Wendover, Hartwell, Amersham, Beaconsfield, High Wycombe, 6.
Cambridge, ...	857	164,459	*Cambridge*, 23. Ely, 6. Newmarket, 2. Wisbeach, 9. Royston, 1.
Cheshire, ...	1,052	395,660	*Chester*, 22. Nantwich, 5. Northwich, 2. Stockport, 50. Macclesfield, 32. Runcorn, Altringham, Congleton, Middlewich, Malpas.
Cornwall, ...	1,330	338,697	*Launceston*, 6. St. Austel, 9. Truro, 9. Penryn, 3. Falmouth, 4. Helston, 8. Penzance, 9. St. Just, 5. Redruth, 8. Fowey, 3. Looe, 1. Padstow, 2. St. Ives, 8. Hayle, Gweek.
Cumberland, ...	1,523	178,038	*Carlisle*, 20. Aldstone, 7. Penrith, 5. Whitehaven, 15. Workington, 6. Cockermouth, 6. Maryport, 4. Wigton, 5. Keswick, Longtown.
Derby, ...	1,028	272,217	*Derby*, 32. Matlock, 3. Buxton, 1. Cromford, 8. Belper, 8. Bakewell, 2. Chesterfield, 6. Ashford, Ashbourne, Wirksworth.
Devon, ...	2,585	533,460	*Exeter*, 37. Bampton. Tiverton, 9. Topsham, 3. Exmouth, 3. Crediton, 6. Dartmouth, 4. Brixham, 5. Plymouth, 35. Tavistock, 6 Barnstaple, 7. Biddeford, 5. Ilfracombe, 3. Hatherleigh, Torrington, Combe-Martin, Bampton, Collumpton, Honiton, Colyton, Chudleigh, Ashburton, Kingsbridge, Modbury, Plympton Earle, Hartland, Moreton-Hampstead, Beeralston, Milton-Abbot, Devonport, 40. Totness, 4.
Dorset, ...	1,006	175,043	*Dorchester*, 5. Poole, 8. Wimborn-Minster, 4. Corfe-Castle, 1. Melcomb-Regis, 8. Weymouth and Bridport, 7. Lyme-Regis, 3. Sherborne, 4. Blandford, Sturminster, Newton, Shaftesbury, 9. Cranborne, Wareham, 6.
Durham, ...	1,097	324,284	*Durham*, 9. Bishop Auckland, 2. Sunderland, 52. South Shields, 22. Stockton, 8. Darlington, 8. Hartlepool, Barnard-Castle, Walsingham, Chester-le-Street, Gateshead, 19. Norham, Tweedmouth, and Spittal.
Essex, ...	1,533	344,979	*Colchester*, 17. Chelmsford, 5. Harwich, 3. Maldon, 4. Tilbury Fort, Saffron-Waldon, Thaxted, Dunmow, Braintree, Manningtree, Rayleigh, Rochford, Brentwood, Rumford, Ongar, Barking.
Gloucester, ...	1,258	431,383	*Gloucester*, 14. Tewkesbury, 5. Berkeley. Cheltenham, 31. Bisley, 5 Stroud, 37. Cirencester, 5. Newent, 1. Bristol, 123. Wooton-under-Edge, Minching-Hampton, Coldford, Stow on the Wold.
Hampshire — *See* Southampton.			
Hereford, ...	863	113,878	*Hereford*, 11. Ross, 3. Leominster, 4. Ledbury, 4.
Hertford, ...	630	157,207	*Hertford*, 5. Ware, 4. St. Albans, 6. Watford, 5. Rickmansworth, 4. Flitchin, 5. Hemel-Hampstead, Bishop-Stortford, Stevenage, Baldock, Tring.
Huntingdon, ...	372	58,549	*Huntingdon*, 5. St. Ives, 3. Ramsay, 3.
Kent, ...	1,557	548,337	CANTERBURY, 15. *Maidstone*, 16. Deal 7. Sandwich, 11. Margate, 10. Ramsgate, 6. Dover, 17. Feversham, 4. Sheerness, 2. Rochester, 10. Chatham, 17. Tunbridge, 10. Greenwich, 29. Woolwich, 17. Deptford, 20. Gravesend, 5. Whitstable, Herne Bay, Queenborough, Reculver, Broadstairs, Folkstone, Hythe, 8. New Romney, Cranbrook, Ashford, Seven Oaks, Dartford, Bromley, Tenterden.
Lancashire, ...	1,766	1,667,054	*Lancaster*, 14. Ulverstone, 5. Preston, 50. Blackburn, 36. St. Helen, 4. Rochdale, 24. Haslingden, 8. Bury, 24. Manchester, 240. Bolton, 50. Oldham, 23. Wigan, 25. Warrington, 21. Liverpool, 282. Colne, 8. Salford, 66. Newton, Chorley, Burnley, Ashton-under-Lyne, 22. Prescot.
Leicester, ...	806	215,867	*Leicester*, 50. Loughborough, 11. Ashby, 4. Hinckley, 6.
Lincoln, ...	2,611	362,602	*Lincoln*, 13. Grantham, 8. Boston, 14. Stamford, 7. Spalding, 6, Gainsborough, 7. Grimsby, 6. Louth, 7. Saltfleet, Holbeach, Bourne. Sleaford, Market-Deeping, Crowland, Donnington, Horncastle, Bolingbroke, Market-Rising, Barton.
Middlesex, ...	282	1,576,636	LONDON, 1,873. Brentford, 2. Uxbridge, 3.
Monmouth, ...	496	134,355	*Monmouth*, 5. Chepstow, 3. Abergavenny, 4. Newport, 10. Pont-y-Pool, 4.
Norfolk, ...	2,024	412,664	*Norwich*, 60. Lynn-Regis, 15. Yarmouth, 27. Thetford, 3. Wells, 3. Wymondham, Castle-Rising, Dereham, Walsham, Cromer, Blakeney.
Northampton, ..	1,016	199,228	*Northampton*, 20. Wellingborough, 5. Peterborough, 6. Kettering, 4. Thrapston, Oundle.
Northumberland,	1,871	241,794	*Newcastle*, 69. *Alnwick*, 7. Tynemouth and N. Shields, 25. Morpeth, 17. Wooler, Belford, Hexham.
Nottingham, ...	837	249,910	*Nottingham*, 51. Newark, 10. Mansfield, 9. Retford, 2.
Oxford, ...	756	161,643	*Oxford*, 20. Banbury, 7. Woodstock, 7. Thame, 3. Henley-on-Thames, 4.

Counties.	*Area in sq. miles.*	*Popula. in* 1811.	*Cities and Towns.*
Rutland,.....	149	21,302	*Oakham*, 2. Uppingham, 2. Stamford.
Shropshire, or Salop,.....	1,343	239,048	*Shrewsbury*, 17. Broseley, 5. Bridgeworth, 8. Much-Wenlock, 19. Ludlow, 5. Bishop's Castle, Oswestry, Ellesmere, Wellington, Shiffnal.
Somerset, ...	1,645	435,982	Bath, 52. Wells, 4. Frome, 9. Wellington, 5. *Taunton*, 12. Bridgewater, 9. Minehead, 1. Watchet
Southampton, or Hampshire,	1,625	312,454	Southampton, 27. *Winchester*, 9. Portsmouth, 49. Gosport, 11. Christchurch, 6. Romsey, 5. Basinstoke, Andover, Lymington, 4. Alton, Alresford, Havant, Odiham, Petersfield, 5.
Stafford,.....	1,184	510,504	*Stafford*, 9. Stoke-upon-Trent, 67. Burslem, 10. Newcastle-under-line, 10. Burton-on-Trent, 4. Litchfield, 6. Uttoxeter, 5. Walsall, 19. Wednesbury, 8. Tamworth, 7. Wolverhampton, 92. Bradley, 3. Stone, Leek.
Suffolk, ...	1,515	315,073	*Ipswich*, 24 Bury St. Edmunds, 12. Beecles, 4. Lowestoft, 4. Woodbridge, 5. Southwold, 2. Aldborough, 1. Bungay, Dunwich, Stowmarket, Eye, 7. Sudbury, 5.
Surrey, ...	759	582,678	Southwark, 142. *Guildford*, 5. Croydon, 12. Kingston, 6. Epsom 3. Richmond, 7. Kew, Wandsworth, 7. Egham, 4. Godalming, Dorking, Farnham, Reigate, 4. Haslemere.
Sussex, ...	1,466	299,753	*Lewes*, 9. *Chichester*, 8. Arundel, 2. Petworth, 3. Brighton, 48. New Shoreham, 27. Newhaven, 1. Hastings, 10. Rye, 7. Horsham. 5. Pevensey, Winchelsea, East Grinstead, Cuckfield, Steyning, Bramber, Midhurst, 6.
Warwick,.....	897	401,715	*Warwick*, 9. Leamington, 6. Stratford-on-Avon, 3. Kenilworth. 3. Coventry, 30. Rugby, 2. Birmingham, 181. Nuneaton, Henley.
Westmoreland,.	762	56,454	*Appleby*, 1. Kendal, 11. Ambleside.
Wiltshire,.....	1,367	258,733	*Salisbury*, 11 Chippenham, 6. Bradford, 3. Calne, 5. Trowbridge, 11. Devizes, 6. Warminster, 6. Wilton, 8. Malmesbury, 6. Marlborough, 4. Wooten-basset, Cricklade, 34. Bedwin, Ludgershall, Westbury, 7. Heytesbury, Hindon, Amesbury, Mere.
Worcester,.....	723	233,336	*Worcester*, 26. Kidderminster, 15. Bromsgrove, 9. Droitwich, 6. Evesham, 4. Dudley, 31. Bewdley, 7. Pershore, Stourport.
York, N. R.....	2,070	242,443	*York*, 30. Whitby, 9. Scarborough, 9. Gisborough, Stockesley, Northallerton, 4. Thirsk, 15. Easingwold, Richmond, 4. Pickering, New Malton, 6.
York, E. R.....	1,280	194,936	Hull, 65. *Beverley*, 8. Great Driffield, Market Weighton, Pocklington, Hedon, Bridlington, Hornsea.
York, W. R.....	2,611	1,154,101	*Wakefield*, 18. Leeds, 151. Sheffield, 109. Doncaster, 10. Huddersfield, 24. Halifax, 26. Bradford, 66. Knaresborough, 5. Boroughbridge, Aldborough, Ripon, 5. Wetherby, Dewsbury, Barnsley, Rotherham, Snaith, Pontefract, 10. Selby, Goole.
WALES.			
Anglesea, ...	271	50,891	*Beaumaris*, 2. Holyhead, 2. Amlwch, 3.
Brecon,.....	754	55,603	*Brecknock*, 5.
Cardigan,.....	675	68,766	*Cardigan*, 3. Aberystwith, 4.
Carmarthen,....	974	106,326	*Caermarthen*, 9. Llanelly, 6.
Carnarvon,.....	544	81,093	*Caernarvon*, 7. Bangor, 5.
Denbigh,.....	633	88,866	*Denbigh*, 5. Wrexham, 5.
Flint,.....	244	66,919	*Flint*, 2. St. Asaph, 1. Holywell, 5. Mold, 3.
Glamorgan,....	792	171,188	*Cardiff*, 9. Swansea, 13. Merthyr Tidvill, 42. Neath, 3. Aberdare, 2.
Merioneth,.....	663	39,332	*Dolgelly*, 4. Bala, 2.
Montgomery, ..	839	69,219	*Montgomery*, 1. Welshpool, 4. Llandilloes, 2.
Pembroke,.....	610	88,044	*Pembroke*, 7. Tenby, 2. Milford, 2. Haverford-West, 5.
Radnor,.....	426	25,356	*New Radnor*, 2. Presteign, 1.
	57,067	15,853,125	
Isle of Wight,...	736	42,550	Newport, 6. Cowes, 4. Yarmouth, Ryde.
Isle of Man,.....	250	47,975	Castletown, 2. Douglas, 6. Peel, Ramsey.
Channel Isles,...	130	76,065	St. Helier, 21. St. Ouen, St. Aubin, St. Pierrie, 13.
Scilly Isles,.....	9	2,582	Newton, on St. Mary's Isle.
Berwick,.....	9	8,484	Berwick-upon-Tweed.
		177,656	

2. SCOTLAND.

Aberdeen,.....	1,985	192,387	*Aberdeen*, Peterhead, Fraserburgh, Kintore, Inverury, Turreff, Huntly, Ballater, Castletown of Braemar.
Argyle, ...	3,800	97,371	*Inverary*, Campbeltown, Oban, Tobermory.
Ayr,.....	1,600	164,356	*Ayr*, Irvine, Kilmarnock, Maybole, Girvan, Cumnock, Muirkirk, Mauchline, Fairlie, Largs, Ardrossan, Beith, Kilwinning, Stewarton, Saltcoats, Ballantrae.
Banff,.....	500	49,679	*Banff*, Macduff, Keith, Cullen, Fochabers, Portsoy.
Berwick,.....	446	34,438	*Greenlaw*, Dunse, Lauder, Earlston, Coldstream, Ayton, Eyemouth, Chirnside, Colbrandspath, or Cockburnspath.
Bute.....	257	15,740	*Rothsay*, Brodick Castle, Lamlash.
Caithness,.....	618	36,343	*Wick*, Thurso, John O' Groat's House.
Clackmannan,....	43	19,155	*Alloa*, Clackmannan, Dollar.
Dumbarton,.....	230	41,296	*Dumbarton*, Helensburgh, Kirkintilloch, Cumbernauld.
Dumfries,.....	1,800	72,830	*Dumfries*, Annan, Moffat, Sanquhar, Lochmaben, Langholm, Gretna-Green.
Edinburgh,.....	360	225,454	EDINBURGH, Leith, Musselburgh, Dalkeith, Portobello.
Elgin,.....	849	35,012	*Elgin*, Forres, Burghead, Aviemore.
Fife.....	504	140,149	*Cupar*, St. Andrews, Dunfermline, Kirkaldy, Dysart, Newburgh.
Forfar,.....	849	170,520	*Forfar*, Dundee, Montrose, Arbroath, Brechin, Kirricmuir, Cupar-Angus, Broughty-Ferry.
Haddington,.....	250	35,886	*Haddington*, Dunbar, North Berwick, Tranent, Prestonpans, Aberlady, Cockenzie, Dirlton, Gifford.
Inverness,.....	4,600	97,799	*Inverness*, Fort-George; Portree, in Skye.
Kincardine,.....	317	33,675	*Stonehaven*, Bervie, Johnshaven, Lawreneekirk.

Counties.	Area in sq. miles.	Popula. in 1841.	Cities and Towns.
Kinross,	83	8,763	*Kinross*, Lochleven Castle, Milnathort.
Kirkcudbright,	882	41,119	*Kirkcudbright*, Castle-Douglas, New Galloway, Creetown, Gatehouse of Fleet, Maxweltown.
Lanark,	870	426,972	GLASGOW, *Lanark*, Hamilton, Biggar, Airdrie, Rutherglen.
Linlithgow,	112	26,872	*Linlithgow*, Queensferry, Bathgate, Bo'ness, Whitburn.
Nairn,	200	9,217	*Nairn*, Cawdor Castle.
Orkney & Shetland,	1,325	61,065	*Kirkwall*, Stromness, Lerwiek, Scalloway.
Peebles,	360	10,499	*Peebles*, Inverleithen, Linton, Traquair.
Perth,	2,588	137,390	*Perth*, Dunkeld, Dumblane, Crief, Comrie, Abernethy, Blair-Athol, Culross, Blairgowrie, Muthill, Doune, Callendar.
Renfrew,	241	155,072	*Paisley*, Greenock, Port Glasgow, Renfrew, Gourock, Neilston, Pollockshaws, Lochwinnoch, Kilbarchan.
Ross & Cromarty,	2,836	78,685	*Tain*, Dingwall, Ullapool, Stornaway, Fortrose, Cromarty.
Roxburgh,	715	46,021	*Jedburgh*, Hawick, Kelso, Melrose, Castleton, Yetholm.
Selkirk,	263	7,990	*Selkirk*, Galashiels.
Stirling,	489	82,057	*Stirling*, Falkirk, Kilsyth, Drymen, Balfron, St. Ninians, Bannockburn, Denny, Grangemouth.
Sutherland,	1,754	24,782	*Dornoch*, Helmsdale, Golspie, Dunrobin Castle.
Wigtown,	451	30,195	*Wigton*, Whithorn, Stranraer, Portpatriek, Newton-Stewart.
	31,164	2,620,184	

3. IRELAND.

		(1841.)	
I. LEINSTER.			
Carlow,	343	86,228	*Carlow*, Tullow, Old Leighlin, Rathvilly, Hacketstown.
Dublin,	388	372,773	DUBLIN, Lucan, Dunleary or Kingston, Howth, Swords, Finglas, Lusk, Rush, Balbriggan, Newcastle.
Kildare,	613	114,488	*Kildare*, Naas, Maynooth, Leixlip, Selbridge, Cloneurry.
Kilkenny,	802	202,420	*Kilkenny*, Castlecomer, Thomastown, Inistioguc, Knocktopher, Callen, Urlingford, Freshford, Durrow, Gowrah.
King's County,	825	146,857	*Tullamore*, Philipstown, Edenderry, Portarlington, Clare, Birr, Banagher.
Longford,	412	115,491	*Longford*, Edgworthstown, Granard, Lanesborough, Ballymahon, Newton Forbes, Johnstown.
Louth,	322	111,979	*Dundalk*, Clogher, Collon, Dunleer, Ardee, Castle-Bellingham, Louth, Carlingford.
Meath,	886	183,828	*Trim*, Navan, Dunleek, Ratoath, Slane, Athboy, Kells.
Queen's County,	620	153,930	*Maryborough*, Athy, Mountmelliek, Mountrath, Abbeyleix, Ballywan, Ballynakill, Stradbally.
Westmeath,	603	141,300	*Mullingar*, Athlone, Kilbeggan.
Wexford,	882	202,033	*Wexford*, New Ross, Newtown-Barry, Gorey or Newborough, Enniscorthy, Taghmon, Clonmines, Ferns, Fort Duncannon.
Wieklow,	775	126,143	*Wicklow*, Arklow, Rathdrum, Bray, Baltinglas, Carnew, Stratford, Donard, Blessington, Aghrim.
Drogheda,	9	16,261	Drogheda.
II. ULSTER.			
Antrim,	1,182	360,875	*Carrickfergus*, Belfast, Lisburn, Antrim, Randalstown, Ballymena, Port-Glenore, Ballymoney, Port Rush, Bushmills, Larne, Ballycastle, Glenarm.
Armagh,	516	232,393	*Armagh*, Charlemont, Lurgan, Portadown, Tanderagee, Markethill, Newry, Keady.
Cavan,	1,162	243,158	*Cavan*, Belturbet, Cootehill, Baileyborough, Virginia, Ballyeonnel.
Donegal,	1,820	296,448	*Lifford*, Stranorlay, Donegal, Ballyshannon, Killybeggs, Buncrana, Carndonagh, Raphoe, Rathmelton, Pettigoe.
Down,	955	361,446	*Downpatrick*, Ardglass, Castlewellan, Rathfryland, Banbridge, Dromore, Hillsborough, Moira, Ballynahinch, Newton-Ards, Bangor, Donaghadee, Portaferry.
Fermanagh,	736	156,481	*Enniskillen*, Irvinestown, Bellanamallard, Newtown-Butler.
Londonderry,	810	222,171	*Derry*, Colcraine, Dungiven, Garvagh, Kilrea, Maghera, Magherafelt, Strabane, Newtown-Limavady.
Monaghan,	511	200,442	*Monaghan*, Glaslough, Clones, Ballybay, Castle-Blaney.
Tyrone,	1,178	312,956	*Omagh*, Dungannon, Auchnacloy, Ballygawley, Clogher, Fintona, Castle-Derg, Newtown-Stewart.
III. CONNAUGHT.			
Galway,	2,360	440,198	*Galway*, Athenry, Aughrim, Ballinasloe, Eyrecourt, Loughrea, Gort, Castle Blakeney, Tuam, Dunmore, Headford.
Leitrim,	672	155,297	*Carrick on Shannon*, Leitrim.
Mayo,	859	388,887	*Castlebar*, Newport, Westport, Kilalla, Ballina, Foxford, Ballinrobe.
Roscommon,	596	253,591	*Roscommon*, Elphin. Loughglin, Castlerea, Boyle, Mount-Talbot.
Sligo,	356	181,886	*Sligo*.
IV. MUNSTER.			
Clare,	1,253	286,394	*Ennis*, Kilrush, Killaloe, Clare.
Cork,	2,765	854,118	*Cork*, Passage, Cove, Middleton, Cloyne, Youghall, Kilworth, Mitchellstown, Fermoy, Doneraile, Buttevant, Mallow, Kanturk, Millstreet, Macroom, Bantry, Dunmanway. Skibbereen, Castle-Townshend, Baltimore, Roscarberry, Clonakilty, Bandon, Kinsale, Rathco mac.
Kerry,	1,795	293,880	*Tralee*, Ardfert, Listowel, Tarbert, Dingle, Castlemaine, Cahirciveen, Killarney, Kenmare.
Limerick,	1,054	330,029	*Limerick*, Askeaton, Rathkeale, Newcastle, Kilmallock, Bruff.
Tipperary,	1,533	435,553	*Clonmel*, Carrick-on-Suir, Cahir, Clogheen, Tipperary, Cashel, Fethard, Killenaule, Thurles, Roserea, Nenagh, Goldenbridge.
Waterford,	736	196,187	*Waterford*, Passage, Tramore, Dungarvan, Tallow, Lismore, Cappoquin.
	30,379	8,175,124	

ABSTRACT showing the Country of BIRTH of the PERSONS enumerated in GREAT BRITAIN.

GREAT BRITAIN.	Born in England and Wales.	Born in Scotland.	Born in Ireland.	Born in Islands in the British Seas.	Born in the British Colonies.	Foreigners and British Subjects born in Foreign Parts.	Not specified where Born.*	TOTAL.
MALES	7,492,317	1,209,095	219,397	44,379	612	27,832	268,494	9,262,126
FEMALES	7,926,156	1,334,511	199,859	52,708	790	16,948	51,336	9,582,308
Total	15,418,473	2,543,606	419,256	97,087	1,402	44,780	319,830	18,844,434

* This Column includes the Returns for the Army, Navy, Marines, seamen in registered vessels, and persons travelling on the night of the 6th June 1841.

II. COLONIES AND FOREIGN POSSESSIONS.

	Area in sq. Miles.	*Population.*
1. EUROPE.		
Gibraltar, ...	1	15,000
Malta, &c.	122	123,000
Heligoland, ...	1	2,200
Ionian Islands, ...	1,098	208.100
	1,222	348,300
2. N. AMERICA.		
Lower Canada,	250,000	664,631
Upper Canada, ..	105,000	371,332
Nova Scotia, } .. Cape Breton, }	18,742	199,870
New Brunswick,	27,704	119,450
Prince Edward's Island, ...	2,134	34,660
Newfoundland, ..	35,913	81,517
Bermudas, ...	22	8,720
	439,515	1,480,180
3. WEST INDIES.		
Jamaica, ...	6,400	414,400
Barbadoes, ...	150	102,912
St. Vincent, ...	130	27,120
Grenada, ...	125	28,120
Tobago, ...	187	14,900
St. Lucia, ...	58	18,150
Trinidad, ...	2,400	45,280
Antigua, ...	108	35,412
St Christopher's,	68	25,272
Montserrat, ...	47	7,659
Nevis, ...	20	11,422
Anguilla, ...	30	3,000
Dominica, ...	275	18 830
Virgin Islands,	92	6,965
Bahamas, ...	4.450	18.573
Guiana, ...	50,000	100,000
Honduras, ...	63,000	4,000
	127,540	882,015
4. ASIA.		
India and dependencies, ...	630,000	83,000,000
Ceylon, ...	25,000	1,250,000
	655,000	84,250,000
5. AFRICA.		
Cape of Good Hope	200.000	153,000
Mauritius, ...	676	93,308
Sierra Leone, &c.		35,523
Gambia		
St. Helena, ...	47	5,000
6. AUSTRALIA.		
New South Wales,	Undefined.	135,000
Western Australia,	Undefined.	2,000
South Australia,	Undefined.	
Van Dieman's Land, ...	Undefined.	45,000

Note.—The numbers attached to the names of towns in the preceding Tabular View signify *thousands*, or decimal parts of a thousand; as, *Cambridge*, 23. *i. e.* 23,000. The population includes the districts of boroughs returning Members to Parliament.

FRANCE.

Astronomical Position. — Between 42° 20′ and 51° 5′ N. lat.; and 8° 25′ E., and 4° 43′ W. long. from Greenwich.

Dimensions. — The greatest length, which is between the most westerly point of Finistere and Antibes, in the department of the Var, is 575 geographical, or 665 English miles; greatest breadth, from Givet in Ardennes to Mont Horumba, near St. Jean Pied de Port, in the Lower Pyrenees, 499 geographical, or 576 English miles. The superficial area, as stated in the *Statistique de la France*, is 52,768,618 hectares, equal to 130,787,160 English acres, or 204,355 English square miles.

Boundaries.—*Northern:*—The English Channel and Strait of Dover (La Manche, and Pas de Calais, of the French), Belgium, Luxembourg, and the Prussian Bavarian Rhenish provinces. *Southern:*—The Mediterranean Sea, and the Pyrenees. *Eastern:*—The Rhine, Switzerland, Savoy, and the Alps. *Western:*—The Bay of Biscay (Golfe de Gascogne), and the Atlantic Ocean.

General Aspect. — The surface of France, generally considered, exhibits an advantageous intermixture of high and low land. The greater part of it, indeed, is composed of a series of river basins, separated by mountains and hills, which expand into plains as they approach the sea-coast. The most distinctly marked of these basins is that of the Rhone, in the south-east, which stretches through five degrees of latitude, from the sources of the Saone to the Gulf of Lyons, and is separated on the east by the Maritime and the High Alps, from the basins of the Po and the Var; and by the ranges of Jura and Vosges from the basin of the Aar and the Rhine. The western boundary is formed by the Cevennes, a long range, which starts off from the Eastern Pyrenees, and after running parallel to the shores of the Mediterranean for about 170 miles, divides into three branches. The most easterly branch continues its direction northwards, parallel to the course of the Rhone and the Saone, and, after some interruptions, terminates in a hilly plain (the Plateau de Langres), about 1000 feet above the level of the sea. This plain is connected with the Vosges by a chain of low hills, called Monts Faucilles, which completes the circuit of the basin.

The other two branches of the Cevennes, known by the names of Forez, and the Mountains of Auvergne, form between them and the eastern branch the valleys of the Allier and the Upper Loire, and are the eastern border of a high and hilly region, which decreases in elevation as it extends westward to the sources of the Charente, from which point to the sea the country sinks into a low and level plain.

The other river basins are almost as distinctly marked as those of the Rhone, the Allier, and the Loire, with this difference only, that the water-sheds which bound them are formed by ranges of hills of very moderate elevation, and in some places even scarcely rising into hills; but all connected more or less remotely with the great central and border mountains. The principal of these well-marked river basins are those of the Loire and the Seine in the centre; those of the Somme, Scheldt, Meuse, Moselle, and Rhine, in the north; those of the Charente, Dordogne, Garonne, Lot, Tarn, Adour, Aude, Herault, and others, in the south-west and south.

The want of ornamental plantations, and, still more, the almost total absence of hedges, give an unusual degree of tameness and irksome uniformity to the scenery of France, and the traveller will in vain look for that cheerful and varied aspect which is so striking in England. The nearest approach to an English landscape is seen in passing through the fresh pastures and gentle eminences of Normandy. Of the other provinces, some, as Picardy, Champagne, and Poitou, consist of wide uninteresting levels; whilst others, as Auvergne, part of Upper Languedoc, and those in the vicinity of the Alps and the Pyrenees, contain bold, but bleak, scenery. The most beautiful, and the most picturesque views are to be found in the Limousin, or on the borders of the great rivers. The banks of the Loire, from Orleans westward, are proverbially beautiful. The Rhone, which is bordered by mountains, presents generally a bold aspect, varied occasionally by a gloomy wildness. The Seine, which is equally broad, but much more tranquil, flows through verdant though less striking landscapes.

The following Table, taken from official documents published by M. Duchatel, exhibits the physical and agricultural division of France, according to the nature of its surface, as at 1st September 1834:—

Cultivable land,	25,559,152	Diverse cultures,	951,934
Meadows,	4,831,621	Ground occupied by buildings,	241,842
Vineyards,	2,134,822	Roads, paths, places, &c.	1,215,115
Woods,	7,422,314	Rivers, lakes, and brooks,	454,365
Orchards and gardens,	643,699	Forests, and unproductive domains,	1,209,432
Willows and Elm plantations, &c.	64,489	Cemeteries, churches, and public establishments,	17,774
Pools and watering-places,	209,431		
Downs, pastures, and heaths,	7,799,672		
Navigable Canals,	1,631		
		(Acres, 130,772,475.) Hectares,	52,762,693

Statement of the area of France, distinguishing approximatively the various kinds of SOIL of which the surface is composed :—

Mountainous country,	4,268,750	Soil of sandy,	5,921,377
Heathy ditto, or landes,	5,676,188	.. clay,	2,232,885
Soil of rich moulds,	7,276,368	.. marshy and swampy,	284,445
.. chalk, or limestone,	9,788,197	.. various kinds,	7,284,242
.. gravel,	3,417,893		
.. stony,	6,612,348	(Acres, 130,772,475.) Hectares,	52,762,693

The coast of France, along the English Channel, is generally irregular in its outline, and forms two great bays, which are separated from each other by the peninsula of Cotentin, or La Manche. The north-eastern part of the coast is mostly low and shelving, and lined in many places by sand-hills. About Cape Gris Nez there are cliffs; and to the westward of the mouth of the Seine the coast is skirted for about sixteen miles by the rocks of Calvados.* The coasts of the western bay are rocky, broken by frequent inlets, and skirted by a great number of rocky islands. The western coast of Bretagne or Finistere is lofty and precipitous, with numerous rocks and islets along the shore. From Finistere, the abrupt rocky hills become gradually lower to the eastward, till at L'Orient, and further to the south-east, they terminate in low clayey and muddy flats, in which the sea forms various inlets, chiefly at the mouths of the rivers. The headlands, however, and the numerous islands off the shore, are still the same hard rock, but slightly covered with soil, and in some parts rising into rugged precipices. To the south of the Loire the coast becomes less broken, but low, and lined with salt marshes, and maintains this character to the mouth of the Gironde. From the Gironde, southward to the Pyrenees, the coast forms almost a straight line, broken only by one small inlet, and is bordered by the *landes*, which are vast downs, links, or plains of sand, interspersed with fens, marshes, and heaths, and only at distant intervals with meadows and cultivated fields. Their soil, however, is not wholly unproductive; a belt of pine forests skirts the coast, while the interior admits of the cultivation of hemp, and afford pasture for sheep. The soil likewise abounds with iron ore, which is smelted with the charcoal produced by the pine forests. The coast of the Gulf of Lyons is characterized by a number of lagoons, separated from the sea by narrow strips of land. Near Toulon the coast assumes a bolder character, and along the Gulf of Genoa becomes high and broken.

GULFS, BAYS, AND STRAITS.—*On the North Coast* :—The *Pas de Calais*, or *Strait of Dover*, between Kent and Picardy, 21 miles wide at the narrowest part, and 20 fathoms deep in the middle; *St. John' Road*, to the south of Cape Gris Nez; *Estuary of the Seine*, full of sandbanks, with narrow intervening channels; *Grand Vay*, a deep inlet, between La Manche and Calvados; the *Road of La Hogue*, a deep bight on the east coast of La Manche; *La Grand Ance* (great cove), or *Ance de Vauville*, and *Mont St. Michael's Bay*, on the west side of La Manche, the latter nearly dry at low water; *Rade de la Fresnay*, and *Bay of St. Brieue*, in Cotes du Nord.

On the West Coast :—*Passage du Four*, *Passage de L' Iroise*, *Passage du Raz*, *Road of Bertheaume*, *Harbour of Brest*, *Road of Camaret*, and *Douarnenez Bay*, all in Finistere; *Port Louis*, the *Morbihan*, or *Gulf of Vannes*, a land-locked bay, studded with islands;† *Quiberon Bay*, and *Estuary of the Vilaine*, in Morbihan; *Estuary of the Loire*, and *Bay of Bourgneuf*, in Loire Inferieure and Vendee; *Pertuis Breton*, *Pertuis d' Antioche*, and *Rade des Basques*, or *Basque Roads*, between the mainland of Aunis, or Lower Charente, and the islands of Ré and Oleron; *Gironde*, the estuary of the rivers Garonne and Dordogne, obstructed at the mouth by sandbanks, through which there are five navigable channels; *Basin d' Arcachon*, a land-locked inlet, with an entrance obstructed by sandbanks, through which there are only two narrow channels.

On the South Coast :—*Gulf of Lyon*, containing the minor *Bays of Narbonne*, *Martigues*, *Marseille*, *La Ciotat*, *Toulon*, &c.; *Bay of Hieres*; *Gulf of Grimand*; *Gulf of Frejus*; *Gulf de la Napoule*; *Road of Gourjan* or *Gourgen*; *Gulf of Nice*.

CAPES.—*Blanc Nez* (White Cape), and *Gris Nez* (Grey Cape), in Pas de Calais; *Cape la Here*, near Havre, at the mouth of the Seine; *Cape Galteville*, or *Barfleur*, the north-eastern, and *Cape la Hague*, the north-western points of the peninsula of Cotentin, or La Manche, and *Cape Levi*, on the north coast of the same department; *Flamanville Cape*, or *Gros Nez*, and *Cape Carteret*, on the west side of La Manche; *Cape de Frehel*, in Cotes du Nord; *St. Matthew's Point*, *le Bec de la Chevre*, *Bec du Raz*, and *Penmark Point*, in Finistere; *Peninsula of Quiberon*, terminating in *Point de Conquet*, in Morbihan; *Cap de la Couronne*, *Cap Croisette*, *Cap de L' Aigle*, *Cap Sicie*, *Cap d' Escampamberiou*, *Cap Benat*, *Cap Taillat*, *Cap St. Tropez*, *Cap de Frejus*, *Cap de la Garousse*, all on the south, or Mediterranean coast.

* These rocks received their present name from one of the ships of the great Spanish Armada, which was wrecked upon them in the year 1588.

† Its name *Morbihan*, means, in the Armoric language, *Little Sea*.

Islands, Rocks, and Banks.—*In the English Channel:—Anfar*, a large bank, dry at low water, in the mouth of the Seine. *Pelee*, 2 miles N.E. of Cherbourg, a small rocky island, with a fort, for the defence of the roadstead. *Chaussey*, or *Chosé*, 3 leagues west of Granville, an islet in the midst of a range of rocks, 3 miles in length. *Isles de Brehat*, the *Seren Isles*, and the *Triagons*, on the coast of the department Cotes du Nord. *Isle de Bas*, 3 miles in length, and 1 in breadth, on the north coast of Finistere, separated from the mainland by a narrow channel.

In the Atlantic Ocean:— Ouessant or *Ushant*, 3 leagues west from the coast of Finistere, a steep and rocky island, about 4 miles long, and 2½ broad, is almost surrounded by rocks, except on the north side, where there is an anchorage, and at the southwest end, where there is a harbour of difficult access, with a lighthouse at the entrance. There is also a lighthouse at the north-east end. *Isle des Sains*, or *Saintes*, a small flat island, 3 miles west of Bec du Raz. From this island a great ledge of rocks, called *Le Pont de Sains*, or *Saint's Bridge*, runs 3 leagues westward into the sea, mostly under water, the furthest out being about 4 leagues west from Bec du Raz, and 9 leagues south of Ushant. This ridge of rocks forms the south side of the passage de l'Iroise. *Penmark Rocks*, off Penmark, a numerous cluster of rocks and banks partly below and partly above water. The *Glenans* and *Sheep Islands*, two clusters of islets on the south coast of Finistere. *Groix* or *Grouais*, 2 leagues to the south of Port Louis, an island 4 miles in length, containing some inhabited houses, and also some wood. *Belliste*, *Houat*, and *Hedic*, all off the coast of Morbihan. Belliste is 9 miles in length, very high and steep almost all round; on the north side is the town and harbour of *Palais;* on the south side are a multitude of rocks both above and under water, very near the shore. Houat and Hedic are connected with Quiberon by ledges of rocks; to the S.E. of Hedic lies a cluster of great rocks called the *Cardinaux*, the largest of which are above water: and 9 or 10 miles farther in the same direction, off Croisic is *Le Four*, a very dangerous ledge of rocks. *Dumet*, a small island off the mouth of the Vilaine. On the coast of Vendee are *Noirmoutier*, *Yeu*, and *Bouin;* the first of which is of considerable size, and noted for its salt works and oysters. Off the coast of Lower Charente are the two important islands of *Ré* and *Oleron*, and the *Isle d'Aix*, near the mouth of the Charente. Ré is a low island, of considerable size, with good harbours for small vessels, and has a citadel called *Saint Martin*, constructed by Vauban. *Oleron*, about 20 miles long, and 6 or 7 broad, is surrounded by banks, and consequently of difficult access; and off its northern point lies a great bank or ledge of rocks, called the *Antioches*, or *Antiochois*, which extend three quarters of a league to the W.N.W. *Cordouan*, an islet off the mouth of the Gironde, with a celebrated lighthouse.

In the Mediterranean:— Riou, S.E. of Marseille; the *Isles of Hyeres*, to the south-east of Toulon, six in number; viz. *Ribaudin*, *Ribaudeau*, *Porquerolles*, *Bagueau*, *Port Cros*, and *Levant* or *Titan*. Close to the mainland, at the east side of the Bay of Hyeres is the high island of *Bergauson*, with a fort. The *Lerins*, small islands near Antibes, on one of which, *St. Marguerite*, is a strong castle, celebrated in the history of the "Man with the Iron Mask." *Corsica*, an Italian island, forms one of the 86 departments of France.

Rivers.—Twenty-one principal rivers, six of which, viz. the *Rhine*, the *Meuse*, the *Seine*, the *Loire*, the *Gironde*, and the *Rhone*, are reckoned among the largest in Europe, water and fertilize the kingdom of France. Of these, with their affluents, the North Sea, or German Ocean, receives:—

The Rhine, which, coming from Switzerland, forms part of the eastern frontier of France, and then continues its course through Germany and Holland. Its principal affluents on the left, wholly or partly within the French territory, are:—the *Ill*, which rises in the department of Haut Rhin, passes by Colmar and Strasbourg, and falls into the Rhine below that city; the *Moselle*, which rises in the Vosges, runs through the departments of Meurthe and Moselle, and joins the Rhine at Coblentz. The Moselle is joined by the *Meurthe*, below Nancy.

The Meuse, which rises in the department of Haute Marne, on the plateau of Langres, flows through the departments of Vosges, Meuse, and Ardennes, from which it passes into Belgium. It is joined on the right by the *Chier*, which flows past Montmedy, and on the left by the *Sambre*, which passes Landrecy and Maubeuge.

The Escaut (Schelnt), which rises in the department of Aisne, runs through the Nord, and then passes into Belginm, where it becomes a large, wide river. Its principal affluents, in France, are,—the *Scarpe*, which flows past Arras, Douai, and Saint Amand; the *Lys*, which passes Aire, and receives the *Deule*, from Lille.

The English Channel receives:—

The Somme, which rises in the department of Aisne, and flows past Saint Quentin, Peronne, Amiens, Abbeville, and Saint Valery.

The Seine, which rises in the plateau of Langres, nearly in the centre of the department of Cote d'Or, flows through Aube, Seine and Marne, Seine and Oise, Seine, and Lower Seine, and enters the sea at Havre de Grace. In this long course it passes Chatillon, Troyes, Melun, Paris, Mantes, Elbœuf, Rouen, Honfleur, and Havre. Its principal affluents on the right are,—the *Aube*, which passes Bar, and Arcis; the *Marne*, which passes Chaumont, Vitry, Chalons, Epernay, Chateau-Thierry, Meaux, and Charenton; the *Oise*, which passes Guise, la Fere, Compeigne, Pontoise, and receives on the left the *Aisne*, which flows past Vouziers, Rethel, and Soissons. The principal affluents on the left are,—the *Yonne*, which passes Clamecy, Auxerre, and Sens; and the *Eure*, which passes Chartres and Louviers.

The Orne, which rises in the department to which it gives its name, and flows through that of Calvados, passing in its course Seez, Argentan, and Caen.

The Vire, in Calvados and La Manche, which flows past Vire and Saint Lo.

The Rance, in the Cotes du Nord, which flows past Dinan and falls into the sea near Saint Malo.

The Atlantic Ocean receives:—

The Aulne, in Finistere, which falls into the harbour of Brest.

The Blavet, in Morbihan, which enters the harbour of L'Orient.

The Vilaine, in the department of Ille and Vilaine, and Morbihan, which passes Vitry, Rennes, and Redon, and receives the *Ille* on the right.

The Loire, which rises in Mont Gerbier-le-Joux in the Cevennes, and flows through the departments of Ardeche, Haute Loire, Lozere, Saone and Loire, Allier, Nievre, Cher, Loiret, Loir and Cher, Indre and Loire, Maine and Loire, and Loire Inferieure, and passes in its course the towns of Roanne, Nevers, Cosne, Gien, Orleans, Blois, Tours, Saumur, Nantes, and Paimbœuf. Its principal affluents on the right are,—the *Arroux*, which passes Autun; the *Nievre*, at Nevers; and, at Angers, the *Mayenne*, which receives the *Sarthe*, from the department of the same name, with its large tributary, the *Loir*. The principal affluents of the Loire on the left are,—the *Allier*, below Nevers; the *Loiret;* the *Cher*, with its tributary, the *Auron;* the *Indre;* the *Vienne*, with its tributaries, the *Creuse* and the *Clain;* and the Nantaise *Serre*.

The Niortaise Sevre, which rises in the department of the Two Sevres, and passes Niort and Marans. It receives on the right the *Vendee*, which gives its name to a celebrated department.

The Charente, which flows past Civray, Angouleme, Cognac, Saintes, and Rochefort, and falls into Basque Roads.

The GIRONDE, which is formed by the junction of the Garonne and the Dordogne. The GARONNE rises in the valley of Aran, in Spain, flows through the departments of Haute Garonne, Tarn and Garonne, Lot and Garonne, and Gironde, passing by St. Gaudens, Muret, Toulouse, Agen, Marmande, La Reole, and Bordeaux. Its principal affluents on the right are,—the *Ariege*, the *Tarn*, and *Aveyron*, and the Lot; on the left,—the *Gers*. The DORDOGNE rises at the foot of Mont D'Or in the department of Puy de Dome, and passes Bergerac and Libourne. Its principal affluents on the right are,—the *Vezere*, joined by the *Correze*, the *Isle* and *Drone;* on the left,—the *Cere*, which flows past Aurillac.

The ADOUR, which rises at the foot of the Pic du Midi, in the department of the High Pyrenees, and flows past Bagneres, Tarbes, Saint Sever, Dax, and Bayonne. Its principal affluents are,—the *Midouze*, on the right; and the *Gave de Pau*, increased by the *Gave d' Oleron;* and the *Nive* on the left.

The NIVELLE, a small stream, which falls into the Bay of Biscay at Saint Jean de Luz.

The *Bidassoa*, the greater part of whose course is in Spain, but which near its mouth forms the boundary between the two kingdoms, and enters the sea at Fontarabia.

The MEDITERRANEAN SEA receives:—

The AUDE, in the department to which it gives its name.

The TEI, in the department of the Eastern Pyrences.

The HERAULT, in the department to which it gives its name.

The RHONE, which, issuing from the Lake of Geneva, separates the department of Ain from Savoy, and flows through the departments of Rhone, Isere, Loire, Ardeche, Gard, and Bouches de Rhone; passing in its course Lyons, Vienne, Tournon, Valence, Montelimart, Viviers, Avignon, Beaucaire, Tarascon, and Arles. Near its mouth it is separated into four branches, which form large islands, of which the Camargue is the largest. Its principal affluents on the right are,—*Ain* and *Bienne; Saone* and *Doubs; Ardeche; Gardon* or *Gard*, formed by the union of the *Gardon d' Anduze*, the *Mialet*, and the *Alais*. Its principal affluents on the left are,—the *Isere*, the *Drome*, and the *Durance*.

The ARGENS, with its affluent the *Arluby*, in the department of the Var.

The VAR, which, in the lower part of its course, forms the boundary between France and the territory of the King of Sardinia.

LAKES. — France contains few lakes properly so called; but along its southern and western coasts there are many stanks or lagoons, *(etangs.)* The lake *Grand Lieu*, (Big place,) in the department of Loire-Inferieure, is the largest of the former class; the stanks of *Carcans* and *Certes*, in the Gironde; *Sanguinet*, or *Biscarosse*, in Landes; *Leucate*, in the Eastern Pyrenees; *Sigean*, in Aude; *Thau*, in Herault; *Camaragne* and *Berre*, in the Bouches de Rhone, are the principal of the second class. To these may be added, the *etang de Bigalia* on the east coast of Corsica, the largest in the island, and very abundant in fish.

MOUNTAINS. — See *anté*, p. 144–148.

GEOLOGY AND MINERAL PRODUCTIONS. — From the time of Cuvier, the geology of France has attracted the particular attention of naturalists. If we attend to the several formations of that country, we find them marked by members of every group of the stratified system, from the non-fossiliferous strata to those of the tertiary and alluvial classes; and likewise igneous rocks from the older granite and trap, to the comparatively more recent extinct volcanoes. On its southern and eastern boundaries, on the flanks of the Pyrenees, and the Alps of Switzerland, we find gneiss and mica slate; and also in the central district of Auvergne mica slate is sometimes seen bounding that volcanic region. In Bretagne is exhibited the older graywacké slate, including large crystals of the curious mineral chiastolite. In its north-eastern confines, the Silurian system is developed containing impressions of that strange animal, the trilobite. In several other districts the same system, the transition of Werner, is developed; as between the Rhine and the Moselle; on the confines of Normandy; and along the course of the Loire, from the centre of France to its southern extremity. In the north-east, and in other localities, it underlies the coal formation; and, in the Vosges, it is metalliferous. The coal formation group also exists in France, frequently connected with the mountain limestone; but it is rather a curious fact, that coal in France is unaccompanied with ironstone, as in Britain, a circumstance which greatly affects the manufacturing interests of that country; for although ironstone is found, it is at a distance from the fuel necessary for smelting it. The coal deposits in France generally rest on the greywacké formation; the latter, it is evident from geological examination, had been convulsed and elevated before the period of the coal, as it is in most countries. In some places the coal deposits repose on granite. In Normandy there is a small coal basin; but the most abundant deposits occur in the central parts; as in the valleys of the Loire, Allier, Creuse, Dordogne, Aveyron, and the Ardeche; and in the south-eastern districts, between the Rhone and the Cevennes. In the departments bordering on Belgium, the coal-formation is rather extensive, commencing to the east of Boulogne, and proceeding in an easterly course for above 100 miles, and is prolonged into Belgium. Although the quantity of coal worked in France is considerable, it furnishes comparatively but a small proportion of the fuel consumed in the smelting and preparation of metals, in factories, and for domestic purposes; nor is its quality equal to that of England and Scotland.

The members of the new red sandstone group extend over several tracts. In Normandy it is of no great extent; but from the Ardennes to the Vosges, including the intermediate districts of the Meuse, the Moselle, and the Meurthe, it exhibits all its characters of variegated sandstones, marls, gypsum, limestone, and rock-salt.

This last mineral is extracted at the town of Vie, near Chateau-Salins. In an easterly direction this formation passes into the district of the Lower Rhine. In the Vosges, the muschelkalk, a shell limestone of peculiar organic characters, is extracted and used as a marble. In this limestone alone has been found the beautiful lily encrinite.

The *Oolitic system* is so intricate in its windings, that it is difficult to follow its course. It nearly surrounds the Paris basin. From Caen, in the north, it takes an easterly course through Beauvais to Luxemburg; while another branch proceeds in a southerly direction, and westward of Paris, through Main and Anjou, to Poitiers, and then turns westward to Rochelle. On the east of Paris, a third branch, commencing at Luxembourg, extends along the course of the Moselle, and the Meurthe, the Vosges, through Coté d'Or, along the course of the Saone, forming part of the Jura chain, and onwards to the confines of Lyons. This group is also ramified through other departments of France, and flanks the Pyrenees and the Swiss Alps. In all these localities, and in all its subdivisions, from the lias to its upper beds, the oolitic group is well developed in its mineral characters, and abounds in finely preserved organic remains. From the examination of the geological phenomena, the remarkable conclusion has been deduced regarding the age of the Alpine regions of Switzerland, and other districts on the confines of France, that the close of the oolitic period marks the era of the elevation of those places; and consequently, that France and Switzerland existed only as the bottom of the sea, while the greater part of Scotland, and a considerable portion of the West of England, were elevated into dry land. In France, too, the greensand and chalk, or cretaceous formations, are extensively developed, covering the oolitic group, and following its sinuosities, except on the confines of the Netherlands, where the chalk overlies the coal and transition slates. Everywhere this group is well characterized by its numerous and peculiar fossils, in a fine state of preservation.

But the geology of France has been brought most prominently into notice, by the contents of its *tertiary* basin. The strata of which that is composed, consist of four principal masses. The first, or lowest (calcaire grosier), is a marine deposit; the second is fresh water; the third marine again; and the fourth, or upper, fresh water; evincing as many changes in the relative level of the sea and land. The lowest fresh water contains much gypsum or sulphate of lime, from which plaister of Paris is prepared. In this member of the group have been disinterred numerous osseous remains of mammiferous quadrupeds, an order of creation of which no remains have ever been discovered in any older formation, if we except traces of the didelphis, observed in England in the oolite. To these remains Cuvier applied his powerful genius and accurate anatomical knowledge, and found that the animals to which they belonged might be compared to several existing genera and species; but that each consisted of an assemblage of parts, which can only be found in several animals now living. These he classified according to their anatomical structure, from which he deduced the habitudes of the living animal; and thus there was opened to his inspection a creation not previously known to have existed. Mammalia belonging to the following orders have been found: — Carnivora Rodentia, or Gnawers; Pachydermata (thick skinned); Ruminantia, and Cetacea. Many of the animals included in these orders had some resemblance to the elephant, hippopotamus, rhinoceros, tapir, hog, horse, deer, hare, &c.; yet all are specifically different, though at the same time they evince an approach in the animal creation to the existing races. On the same ground, the fishes, conchifera, &c. of the tertiary era, become exceedingly interesting. Vast numbers of fossil shells, in a more perfect state of preservation than those found in previous formations, have been extracted from the Parisian strata, in which, as we approach from the older to the newer, the shells become more like to the recent species, and are found in greater numbers. The remains of birds and insects have also been found. Involved amongst the volcanic products of Auvergne, and in some other places of France, similar remains have been discovered in tertiary strata.

Unstratified Rocks.—A country whose surface is so varied as that of France, may be expected to exhibit evidences of the agencies by which the aqueous rocks have been elevated. Accordingly, its confines, the Alpine regions of Switzerland and the Pyrenees, furnish abundant evidence of gigantic igneous action, where granite peaks have burst through, and elevated the stratified systems, and along the flanks of which granite is often ramified. In the central provinces of Auvergne, ridges of granite (associated with gneiss) rise to the height of 3000 feet, and form the eastern and western boundaries of that volcanic region. Here, too, and in the adjoining province

of Vivarais, are extensive masses, dykes, and overlying caps of the trap series;—basalts and greenstones often beautifully columnar. Besides these, numerous volcanic cones rise to a great elevation; the summit of the highest, Puy de Dome, being 4,846 feet above the level of the sea. Of the activity of this volcanic region there is no written or traditionary record, the epoch of eruption having been probably anterior to the historieal period, though certainly later than the tertiary era. For this latter assertion there is physical evidence in the manner in which the tertiary deposits are involved amongst the lavas and scoriæ, and which must therefore have existed before the outburst of the volcanic matter. The tertiaries here abound in the remains of mammifers, &c. similar to those of the Paris basin. The aspect of this district is remarkably striking; naked cones and dome-shaped mountains, destitute of vegetation, presenting waving streams of lava, and extensive and desolate tracts of ashes, rise to the height of several thousand feet. Their summits are often found to be penetrated with deep and yawning craters, whose rugged edges form the commencement of hideous channels and gorges which surround the mountains. The average extent of this region is from 40 to 50 miles in length, and 20 in breadth. The plains and surrounding country are extremely fertile; the felspathic lavas (trachytes) in particular, being highly favourable to vegetation.

Of the eighty-six departments of France, eighty-five contribute in some degree to the mineral wealth of the kingdom; that of Gers is the only exception. There are forty-six *coal-fields*, situate in thirty departments, viz. Loire, Nord, Saone et Loire, Aveyron, Gard, Calvados, Nievre, Haute-Loire, Loire Inferieure, Tarn, Herault, Haute Saone, Allier, Maine et Loire, Puy de Dome, Rhone, Mayenne, Ardeehe, Pas de Calais, Moselle, Correze, Creuse, Vosges, Dordogne, Haut Rhin, Vendee, Bas Rhin, Cantal, Lot, and Aude. The most important of these coal-mines are those of Loire, which extend over an area of 42,000 English acres, between the two navigable rivers Rhone and Loire, by means of which their produee finds its way to Marseilles, Mulhausen, Paris, and Nantes. The next in importance are those of the Nord, Saone et Loire, Aveyron, Gard, and Calvados; the produce raised in the remaining twenty-four departments is very small. Of late years, the general produce of the coal-mines has been greatly increased, but is very far from having reached its limit. In 1814, the total quantity of eoal, lignite and anthraeite, raised in all France, was only 665,610 tons; in 1836, it had increased to 2,544,835 tons.

In the production of *iron*, France ranks next to England; there are twelve distinct localities or districts, in which the making of iron is prosecuted, these embrace the departments of—1. Ardennes, Moselle, Meuse; 2. Eure, Orne, Mayenne, Morbihan, Sarthe, Loire Inferieure, Cote du Nord, Eure et Loire. Ille et Vilaine, Manche, Loir et Cher, Maine et Loire; 3. Bas Rhin, Vosges, Moselle; 4. Coté d'Or, Haute Saone, Doubs, Jura; 5. Coté d'Or, Haute Marne, Vosges, Meuse, Marne, Aube, Yonne; 6. Nievre, Cher, Allier, Saone et Loire; 7. Vendee, Indre, Cher, Vienne, Indre et Loire, Loir et Cher, Haute Vienne; 8 Creuse, Puy de Dome, Cantal, Aveyron, Gard, Ardeche, Loire, Isere, Ain; 9. Charente, Dordogne, Lot et Garonne, Tarn et Garonne, Correze, Haute Vienne; 10. Drome, Isere, Hautes Alpes, Vaucluse; 11. Landes, Gironde, Lot et Garonne; 12. Basses Pyrenees, Hautes Pyrenees, Arriege, Aude, Pyrenees Orientales, Herault, Tarn.

The production of other metals is of little or no commercial importance; the whole value in the articles of lead and silver, antimony, copper, and manganese, having amounted in 1836 to less than £60,000, giving employment to only 1760 workmen. There are eleven lead mines, eleven of antimony, and five of copper.

Salt is made in various parts of the kingdom; but the principal place of production is the *Salines de l' Est*, near the small town of *Salins* in the department of Jura. They are wrought by lessees, yield about 20,000 tons a-year, and afford a considerable revenue to government. The heat of the climate on the south and south-west coasts is favourable to the evaporation of salt water, and consequently to the formation of bay salt. The duty levied upon salt amounts to about £2,000,000 sterling a-year; but this heavy tax limits the consumption of the artiele to domestie purposes, and to a trifling export. France contains 243 mineral springs, many of which are collected in baths for the aecommodation of invalids. Mont Jura supplies asphalt, at Seyssel in the department of Ain, and at other places. The neighbourhood of Paris abounds in quarries of freestone, which are also numerous in other distriets, and even in several, as Lower Normandy, which are comparatively level. The houses are consequently built of stone in those towns which, like Paris and Caen, are near quarries. There are marble quarries in several of the mountain districts, but not in situations to admit of exportation. The number of workmen, in 1836, who depended

upon mining and its consequent operations, amounted to 273,364, while the total value created by their labour amounted to £15,107,392.

All the mines of France are placed under the charge of the Board of Roads, Bridges, and Mines *(Direction Générale des Ponts et Chaussées, et des Mines)*, which was empowered by a law passed in 1833 to collect statistical details of the mining industry of the kingdom. Attached to this department is a staff of well-instructed and able engineers, who make a personal inspection of every establishment connected with mining operations, and, from the materials supplied by these officers, a report is carefully drawn up, and presented every year to the Minister of Public Works. There is also a special school of mines, where the engineers are instructed. There are, besides, special inspectors, charged with the inspection of mineral waters, of which 76 springs are subject to inspection, 8 belonging to the state, 43 to communes, and 25 to private individuals.

Climate. — In a country so extensive and so diversified in surface as France, it is difficult to include a description of the climate under a few special heads. The north of France, comprising Flanders, Picardy, Normandy, Brittany, and, in general, the country to the north of a line drawn diagonally from lat. 47° on the western to lat. 49° on the eastern frontier, bears a great resemblance in temperature and productions to the southern part of England. Rain falls frequently, and the country is consequently well adapted for pasture. Here, as in England, the principal objects of culture are wheat, barley, oats, rye, and such fruits as apples, pears, and cherries; also hemp, flax, and rapeseed. It is in this division of France alone that the natural pastures are rich and extensive. Here also the different species of wood, as oak, ash, elm, &c., bear a close resemblance to those of England. In the central region, or the country comprehended between the diagonal already mentioned, and a similar line drawn from 45° on the west to 47° on the east, with the exception of the mountainous districts, the winter is sensibly shorter and milder. Wheat, barley, oats and rye are still raised, but maize begins to appear, and the vine is generally cultivated. The weather also is more steady than in the north. In summer there is little rain; and storms, when they occur, are frequently accompanied with hail; but, on the whole, the temperature is perhaps the most pleasant in France, being exempt equally from the oppressive heat of the south and the frequent humidity of the north. The climate of the southern region approaches that of Spain or Italy. In summer it is necessary to suspend active exertion during the middle of the day; a shaded situation is desirable for a dwelling, and water is requisite for the purposes of agriculture. In this region, the heat is always sufficient to produce an exuberant crop, where the ground can be irrigated; hence the frequency of wells, the water of which is generally raised by means of a wheel and some rude machinery. Wheat is cultivated in some places; barley, oats, and rye, only on the high grounds; maize is very general, and the vine supplies not only the main article of export, but the usual drink of the inhabitants. The common fruits are olives and mulberries; and in a few very warm situations oranges and lemons. Good pasture is found only in mountainous or irrigated tracts. To pulmonary invalids the climate of this region may be advantageous; but in this respect also very much depends upon the locality; the winter in the south-east being at intervals rendered very cold by the *vent de bise*, a piercing wind which blows from the Alps, and the mountains of Auvergne.

The climate of Brittany, which projects far into the Atlantic, is as humid as that of Ireland or Cornwall. Normandy, with part of Picardy and French Flanders, may be compared to the inland counties of England. In the interior, however, the rains are less frequent, but heavier; so that there is much less difference in the quantity of rain which falls in the course of the year than in the number of rainy days. The atmosphere of France is much less cloudy than that of England. As in Britain and Ireland, the most frequent wind is the south-west, which prevails also, though in a less degree, in the central portion of the kingdom. In the south the more common winds are from the north.

The difference of temperature between London and Paris is not considerable, nor is the degree of heat found to be intense along the west coast of France till reaching, or rather passing Poictou. In the interior the difference is much more perceptible, and is strongly felt at Lyons, and still more in the latitude of Nimes, Aix, Marseille, and Toulon. On the whole, the variations of climate between the north and the south are considerably greater than between the north and the south of Britain, where the effect of difference of latitude is so much modified by the surrounding sea. The harvest in the north generally begins between the 20th and the 25th of July; in the centre, eight or ten days earlier; and in the south, about the end of June. Septem-

ber and October are the months of vintage. The great hazard to the corn of the central portion of the kingdom arises from violent storms of rain and hail; in the south, from the want of rain in spring. In winter, the *vent de bise* often proves destructive to the olives. Great heats occur in July, August, and September, during which period also much annoyance is experienced in the south from gnats, flies, and other insects; even scorpions are found in that warm climate.

VEGETABLE PRODUCTIONS.—France contains fewer artificial or ornamental plantations than England, but a much greater extent of natural forests, the total surface of ground covered with wood being computed at nearly seventeen millions of acres, or one-eigthth part of the area of the kingdom. Forests are to be found in almost every department. Lower Normandy contains several of considerable extent. There is a large forest at Fontainbleau, and one still larger to the north of the Loire, in the vicinity of Orleans. Those situate in the vicinity of the sea, of navigable rivers, or of great works, such as glasshouses and iron-founderies, have long been subjected to an improvident consumption; so that now the principal forests are to be sought for at a great distance inland, particularly in the north-eastern part of the kingdom, in the department of Ardennes, and in the extensive mountainous tract which forms the boundary on the side of Switzerland. Of the 16,700,208 acres which are covered with wood, there belonged to the Government in 1836, 2,293,063, divided into 1,473 forests. A very small proportion of the trees are allowed to grow for large timber; the rest are subjected to an annual cutting and sale for fuel; a purpose for which coal is very little used in France, except in the case of forges, glasshouses, and other works of the same kind. In the Government forests, gross mismanagement prevailed during the time of the Revolution. Extensive tracts were sold for trifling sums; while everywhere the timber was lavishly felled. In 1801, however, a special board was appointed for the protection of the forests, who have introduced the most satisfactory regulations, and the annual cuttings now produce a revenue from £700,000 to £800,000 sterling.

The only useful plants really indigenous to France are the fig, the apple, the pear, the plum, and perhaps we may add the truffles of Angouleme and Perigord. Many useful plants have been naturalized by culture. The cherry-tree and the vine were first planted by the Romans; the Greek colonists on the coasts of the Mediterranean introduced the olive and the raspberry; and, since the discovery of the New World, France has obtained the acriviola of Peru, the lycopersicum of South America, the potato of Virginia, and the maize or Indian corn. The humble parsley has been brought from Sardinia, and the cardoon from Barbary. The pomegranate has also been transported from Africa, and planted in the southern regions of the kingdom. The gardens, the orchards, and in some places even the fields, are adorned with the indigenous productions of Asia, the orange, the lemon, the white mulberry, the black mulberry, the apricot, and the peach. Other plants, originally imported from Asia, are now common, as the almond, the walnut, and the finest kinds of melons. The kidney-bean, the white endive, and the lettuce, have passed from India to Western Europe; and the weeping willow, now common on the banks of the French rivers, was obtained from the neighbourhood of Babylon.

Near the most common forest trees, as the oak, the birch, the elm, the mountain ash, and the beech, may now be seen the false acacia, brought from Virginia, different kinds of American oak, and the horse chestnut, which is indigenous to Turkey in Asia. The Norwegian and the Canadian firs now grow in the highest regions of the kingdom. To the aspen, the black poplar, and the white poplar, which are natives of the country, other varieties have been added from Italy and America. Forests of resinous trees extend along the sea-coasts of the Landes. In the same region, and in the neighbouring department of Lot and Garonne, the *quercus suber*, or cork tree, is cultivated through an extent of thirty or forty leagues. The firs of the Jura and the Vosges afford timber for the house-carpenter; and in Brittany the pine furnishes a substitute for oil and candles. The fruit of a particular kind of cherry *(cerasus sylvestris)* which abounds in the Vosges, yields a *kirchenwasser* (cherry brandy) not inferior to any that can be had in the Black Forest of Swabia. The mulberry-tree, the olive, and the orange, are cultivated in the southern departments. The fruit of the plum-tree forms a considerable branch of trade in the departments of Var, Lot and Garonne, Indre and Loire. The finest fruits in the country round Paris are the chasselas or raisins of Fontainbleau, the peach of Montreuil, and the cherry of Montmoreney. Different vegetables have acquired, on certain soils, a superior quality; as the kidney-bean in the neighbourhood of Soissons, the carrots of Amiens, and the artichokes of Laon.

Next to wheat, the most important of all the vegetable productions of France is the vine, the culture of which extends, more or less generally, over the half of the kingdom, beginning as far north as Champagne, and spreading over the country to the south and the west. In Champagne, however, and even in Burgundy, the extent of the culture is very limited; in Provence, and the lower part of Languedoc, where the climate is warmer, the cultivation is more general, though still not managed with the same skill as along the banks of the Garonne, where the spirit of improvement is stimulated by the demand for the supply of foreign markets. From the great diversity of soil and climate, the quality of French wines is very various. The quantity produced has been considerably increased since 1790, both from the subdivision of large estates, and from the extent of waste land which has since that period been brought into cultivation; and as the vine succeeds in light and unproductive soils, its culture gives a value to much ground which would otherwise be useless. It is computed that nearly 5,000,000 of acres are planted with vines, and that the value of the annual produce is from £28,000,000 to £30,000,000 sterling, of which only a tenth or a twelfth part is exported. A further quantity, equal to about a sixth of the above, is distilled into brandy, of which the best is found in the vicinity of the Garonne.

Wheat is, however, the principal vegetable production of France; next to it, after wine, are rye and oats, and, though in much smaller quantities, barley, buckwheat, maize, peas, beans, potatoes, flax, hemp, and tobacco. Madder also is cultivated on a small scale; saffron, cultivated formerly to a great extent, is now confined to one district (the Gatinois) in the south of France; hops are raised only in Picardy and French Flanders. Tobacco is allowed to be cultivated only in the eight departments of Bas Rhin, Bouches du Rhone, Ille et Vilaine, Lot, Lot et Garonne, Nord, Pas de Calais, and Var; upon a total number of 9920 hectares (24,537 English acres), which produce above eleven millions of kilogrammes (24,260,346 English lbs. avoirdupois.) Subjoined are the computed values of the following articles produced annually in France:—

Wine,	£30,000,000	Olive-oil, rape-seed, and cole-seed,	£2,800,000
Hemp,	1,200,000	Tobacco,	300,000
Raw Silk,	60 ,000	Chesnuts,	300,000
Flax,	800,000		
Madder,	200,000		£41,800,000
Wood for fuel, and timber,	5,600,000		

Of the following articles, similar to the produce of Britain, we subjoin the average quantity, and price, along with the total annual value:—

	Quarters.	*Average price.*	*Value.*
Wheat,	18,508,000	.. 41s. 8d. ..	£38,558,000
Rye, and mixed corn,	10,886,000	.. 27s. 10d. ..	15,150,000
Buck-wheat,	3,022,000	.. 14s. ..	2.115,000
Barley,	4,520,000	.. 23s. 2d. ..	5.236,000
Peas and Beans,	646,000	.. 41s. 8d. ..	1,346,000
Potatoes (56,928,000 bushels),	... ...	.. 10½d. ..	2,491,000
Oats,	11,524,000	.. 20s. 10d. ..	12,000,600
Maize, or Indian Corn,	2,265,000	.. 27s. 10d. ..	3,152,000
			£80,048,000

ANIMALS.—The wild animals of France are not so numerous as those of Germany, because the forests are not so large, nor the mountains so extensive. The black bear and the brown bear are found in the Pyrenees; the lynx is seen in the High Alps, but is now rare; the chamois and the wild goat never leave their haunts in the southern and eastern limits of the kingdom. The forests of the Vosges, and the woods along the Moselle, afford shelter to the common squirrel; other varieties are not uncommon in the High Alps. The yellow martin is found in the same department, and the marmot, near the summits of the Alps and the Pyrenees. The ermine and the hamster are found in the Vosges and Alsace. The rat, the field mouse, the common mouse, the dormouse, and the mole, everywhere frequent the fields, the houses, and the gardens. The water-rat and the otter keep to the banks of such marshes and rivers as are little frequented; the solitary and timid badger digs its burrow in the remotest woods; and in many of the provinces, the polecat, the fox, and the weasel, prey upon the poultry yards. All the large forests serve as places of refuge for the wolf, which is frequently and largely destructive to the sheep and lambs. Indeed, regular officers, called *Lieutenants de Louveterie*, are appointed for wooded districts; and, on occasions of heavy loss, recourse is had to a general hunt, of which the usual result is only the partial destruction of the enemy, without any sensible reduction of their numbers.

Sheep are reared in almost every province. The mutton is good, but in the art

of improving the fleece, the French have yet much to learn. Merinos were first brought from Spain in 1787, and formed into a royal flock at Rambouillet. The quality of the stock, which was originally good, has been progressively improved; and distribution of merinos has been successively made to proprietors of sheep-pastures in all parts of the kingdom. The consequence has been, that in many districts the weight of the fleece has been nearly doubled; and the annual produce of merino wool is valued at £3,583,000 sterling. Still in the less improved parts of the country, very little attention is paid to the breeding of sheep, or to the improvement of the wool.

Of beeves, it is believed that there are not fewer than twelve or fifteen different kinds in France, and in the central and southern departments a great part of the agricultural labour is performed by oxen. The total number of beeves in France in 1812 was reported officially to be,—bulls, 214,000; oxen, 1,702,000; cows, 3,910,000; heifers, 856,000; but since that time the number must have materially increased, as in 1816 a duty was laid upon all foreign cattle imported. The art, however, of improving cattle by breeding is little understood, nor is there much judgment shewn in gradually fattening them by removal to richer pastures. Still the beef and mutton of the north and west are very good; and the general rate of price is one third lower than in England. Butter is made and used very generally, but cheese comparatively little. In the south, however, even butter is little known, its place in cooking being supplied by olive oil. In 1819, a large flock of Cashmere goats were imported, and sent to browse in the eastern Pyrences, where they are said to experience little inconvenience from the change of climate.

In the number of horses, as well as in their size and beauty, France is greatly inferior to Britain; but in the performance of labour the inferiority is much less conspicuous; the strength of the horses is greater than their appearance indicates, in consequence of their being kept entire. Of the aggregate number of horses in France (about 1,500,000) more than half belong to the northern provinces, Normandy, Brittany, Picardy, Alsace, and the Isle of France.

The asses of France, if compared with those of Spain and Italy, must be considered degenerate animals; a breed, however, is found in the department of Vienne, which is remarkable for its long hair and great size, almost equal to that of the mule. Mules are almost as little known in the north of France as in England; but in the central and southern provinces they are very generally reared.

Three distinct sorts of swine are found in different parts of France. The pure breed, as it is called, and which is supposed to have existed in the country in the time of the Celts, is still preserved in Normandy. It fattens so well, that some of the pigs weigh from 300 to 400 lbs. The race is distinguished by the small head, narrow ears, and white colour. The Poitou pigs are neither so large, nor so well formed; they are remarkable for large heads, broad pendulous ears, and long white hair. A third sort, in Perigord, differs from the others in the roughness of the skin, and black colour. From these three breeds others have sprung, differing from them principally in colour, black being prevalent in the south, white in the north, black and white in the central provinces. A great many pigs are bred in the departments of Lower Rhine, Moselle, Meuse, Aube, and Marne.

In some of the departments poultry are not the least valuable of their products. The cock and hen of Caux form a distinct variety. The ash-coloured goose attains a great size in Lower Languedoc; and is found also in large numbers in the departments of Lower Rhine, Upper Garonne, and in other parts of western France. The best ducks, it is said, are those of Lower Normandy and Languedoc. The manner in which the goose and the duck are fed in some departments, renders their livers excessively large, and gives them a delicacy much appreciated by gourmands. The geese round Strasbourg, and the ducks of Toulouse, are thus tortured to gratify the taste of the Parisians. Of wild birds, almost every species common to Europe is found in France; besides which, flamingoes from Africa appear occasionally in flocks on the southern coasts; the witwall and the midwall probably indigenous to Candia; the beccafico or fig-picker, which is sold for high prices in Paris; and different piannets or creepers, that frequent steep rocks and the walls of ancient castles, are also seen. Numerous other species likewise visit France every year, appearing with the spring, and taking their departure at the end of autumn for a warmer climate. There are different varieties of larks, quails, ortolans, hoopoes, loriols, messengias, martlets, turtle doves, swallows, and nightingales. Among the singing birds are, the goldfinch, the linnet, and the bulfinch. In the central and western departments, the red partridge is not rare; but in the southern the grey is more common than any other variety

Woodcocks and snipes frequent the woods and marshes; the former are very numerous in Picardy, the latter in Auvergne. The coasts of the Channel and the ocean are frequented by different kinds of wild fowl, as the plover, the lapwing, the widgeon, the sea-lark, and the wild duck, of which a great many are sent to Paris.

The common viper and the asp are often seen in mountainous, stony, and wooded districts, as in the country round Lyons, Grenoble, and Poitiers. Various sorts of adders are found in central and southern France; and in some of the rural districts a species of snake, known by the name of the hedge-cel, is considered to be not unwholesome food. Lizards are sufficiently numerous; and different varieties of frogs and toads abound throughout most of the departments. Turtles are sometimes taken on the Mediterranean and the Atlantic coasts; and the fresh-water tortoise, not uncommon in the southern marshes, is often kept in gardens, where it destroys insects and other noxious animals. The water-aft is most common in the southern departments, and the common lizard is found over the whole kingdom.

Immense numbers of snails are consumed in Alsace and Saintonge. From the latter province alone snails are in some years exported to the value of £1000 sterling, and are even sent to the West Indies. Three different varieties, common in the fields of southern France, together with the pomatia, the most common of them all, since it is found in every vineyard, the shagreen helicite, which frequents the gardens, and the nemoral helicite of the meadows and fields, are those which are eaten, or which furnish the materials for soups and cosmetics.

All along the north coast, cod, mackerel, herring, pilchards, turbot, ray, soles, salmon, whitings, and mullet abound. On the Atlantic coast, and still more in the Mediterranean, great quantities of sardels or sardines are caught, which appear periodically in shoals like the herring; and in the Mediterranean, the tunny is found in the early part of summer. Cetaceous animals sometimes appear on the coasts. The whale frequented the gulfs of Gaseogne and Lyons, in the time of Strabo and Pliny; and in the early part of the twelfth century, the Basques derived considerable profit from their whale fisheries; but the appearance of a whale on the French coast is now a rare phenomenon.

The fishing of marine *mollusca* forms an important branch of industry. The horse-foot oyster, common on the coast near Boulogne-sur-mer, is not considered the best; but the common oyster is so much prized, that immense quantities are sent from the northern coasts, where they abound, more particularly along the western coasts of Cotentin, or La Manche, to Paris, to the value of from £40,000 to £50,000 yearly. The common muscle is a valuable article of food to the lower classes, on some of the coasts of France; the crustacea too are highly esteemed for the same purpose. The common lobster, and another species remarkable for its great size and its brown and yellow colour, appear on the tables of the wealthy Parisians.

Several noxious insects are found, some of them indigenous to the country, particularly a species of weevil, very destructive to grain. Both the European and the red scorpion appear on the Mediterranean coasts, where the black-bellied lycosis, a sort of tarantula spider, is also to be found. The commercial intercourse between France and India has introduced the aphis, which destroys the apple-trees; and two species of neuroptera, chiefly in Provence and the neighbourhood of Bordeaux, where they destroy the timber of the houses, and in the naval yards. In the southern provinces, the bee produces a great quantity of honey and wax; and the silk-worm, habituated to the climate since the time when Louis the Eleventh planted the mulberry-tree, forms great part of the wealth of Dauphiny. The winged insect also which forms the gall-nut, adds very considerably to the value of the oaks in the southern departments; and the cantharides, or blistering-flies, are likewise found there.

PEOPLE.—The French people are composed of five principal races: 1. The *Græco-Latin* race, comprehending the *French*, who inhabit the country to the north of the Loire, and who are likewise found immediately to the south of that river; the *Romance*, who occupy the country to the south of the French; and the *Italians*, who inhabit Corsica. This race includes more than nine-tenths of the population of France. The first two sub-races speak different languages, both nearly allied to the ancient Latin, but containing also words and idioms of Gothic origin. These two languages were formerly distinguished as the *Langue d'Oc*, or *Romance*, spoken in the south of France, and the *Langue d'Oui*, or proper French, which prevailed in the north. 2. The *Germanic race*, comprehending the *Deutsch*, *Allemands*, or *Germans*, who form the bulk of the population of Alsace, and part of Lorraine; and the *Neider Duitsch*, or *Flemings*, who are found in the departments of the north. 3. The *Breyzard*, or *Bretons*, in Brittany, belong to the *Celtic* or *Cymryc race*, and speak a cognate dialect of the Welsh. 4. The *Escualdunac* or *Basques*, in the Low Pyrenees,

belong to the *Basque race*. 5. The *Jews*, who are found in all the principal towns of the kingdom, belong to the *Semitic race*.

POPULATION. — Towards the end of the seventeenth century, the territory of France, then equal, or very nearly equal, to its present extent, appears to have contained about 20,000,000 of inhabitants. In 1791 a census was taken by order of the National Assembly, when the population of the kingdom was ascertained to be 26,363,600. Since that time the periodical estimates of the population are formed, not from actual survey, but by adding for the intervening period the number of births, and deducting the number of deaths, of which accurate records are kept. The ratio of increase is greatest in the lower classes; the people of the middle and upper ranks seldom have large families. Men in such stations in France are much less habituated to steady industry than in England; the openings in trade to respectable employment and eventual competency are comparatively few; and in many situations the incomes are adequate to the support of one individual only. The climate and soil are generally not less salubrious than those of Britain, and the advantages attendant on agricultural habits are enjoyed by a much greater proportion of the population; but a considerable waste of health, and even of life, is occasioned by the crowded state of the towns, and in the country, by the damp situations of many of the cottages. The want of comfort among the lower orders and their inattention to cleanliness tend to the same result; but, on the other hand, the general activity, temperance, and cheerfulness of the people, are all in favour of health and longevity. In 1811, when the population amounted to about 29,000,000, the following estimate of their employments was made by the Count de la Borde: —

In Agrieulture, ...	17,500,000
,, Manufactures, ...	6,200,000
,, Various other employments, . . .	4,500,000
Indigent, ...	800,000
	29,000,000

TABLE of the AREA and POPULATION of FRANCE, and the proportionate number of Inhabitants to a square league, at the date of each enumeration, from 1700 to 1836.*

Years.	*Area in sq. leagues of 25 to a degree.*	*Population.*	*Number of Inhabitants to each sq. league.*
1700, by enumeration, ...	25,296	19,669,320	740
1762, ,, ...	26,597	21,769,163	819
1784, calculation from births,		24,800,000	936
1801, by enumeration, ...	26,713	27,349,003	1,024
1811, ,, ...		29,092,734	1,089
1821, ,, ...		30,461,875	1,140
1831, ,, ...		32,569,223	1,219
1836, ,, ...		33,540,908	1,256

STATEMENT of the POPULATION of FRANCE, distinguishing the Sexes and civil condition of the Inhabitants, with the number engaged in the Military and Naval Services, according to each census taken between the years 1801 and 1836.

CLASSES.	*Population at each Census.*					
	1801.	1806.	1821.	1826.	1831.	1836.
Males — Not married, ...	6,810,672	7,846,066	8,294,557	..	3,871,981	9,507,285
Married, }	5,823,619	5,227,580	5,609,119	..	6,051,795	6,213,247
Widowers, }		659,385	679,351	..	722,913	740,169
Army, ...	609,495	579,819	182,674	..	368,921	..
Navy, ...	66,095	72,725	20,401	..	26,940	..
Total, ...	13,309,881	14,335 575	14,786,102	..	16,042,550	16,460,701
Females — Not married, ...	7,664,157	8,291,792	8,649,835	..	9,064,977	9,267,411
Married, }	6,372,957	5,229,764	5,598,030	..	6,053,011	6,195,097
Widows, }		1,273,019	1,417,235	..	1,501,140	1,617,701
Total, ...	14,037,114	14,794,575	15,665,100	..	16,619,128	17,080,209
Total of both sexes, ...	27 346.995	29,180,150	30,451,202	31,858,937	32,661,678	33,540,908

* The population, according to the census of 1836, is published in a Royal Ordonnance, dated 30th December 1836; and is ordered to be considered as the only authentic enumeration during the five years commencing 1st January 1837.

During the period of nineteen years, from 1817 to 1835, the mean annual number of births in France was 969,507; of marriages, 243,009; of deaths, 802,585; and the increase of the population, 166,922. If this rate of increase should continue the same, the population will be augmented by a tenth in 18 years, two-tenths in 35 years, three-tenths in 50 years, four-tenths in 64 years, five-tenths, or one half, in 77 years, and will double itself only once in 131 years. During these nineteen years the total number of births was 9,496,123 boys, and 8,924,537 girls; being a ratio of nearly 17 to 16; and this ratio was nearly the same for each of the years, its greatest amount having been as 15 to 14, and its smallest as 19 to 18. It was formerly supposed that the ratio of male births to female, was as 22 to 21, which differs sensibly from 17 to 16; but the latter is more worthy of confidence, since it is the result of nearly 18½ millions of births of both sexes, a greater number than was ever before employed in determining the question. The births, however, of natural children do not bear the same proportion. From 1817 to 1835, the number of illegitimate births in the whole of France amounted to 670,338 boys, and 641,664 girls, giving a ratio of nearly 24 to 23. The proportion of illegitimate to legitimate children was 1 to 13.04. The deaths of males exceeded those of females in the proportion of 55 to 54. There was one death for every 39.4 inhabitants, and for every 1.21 births; and there was one birth for every 32.6 inhabitants, and for 0.83 deaths, or nearly 10 births for 8 deaths. Supposing these proportions to continue permanent, the ratio 32.6 expresses the mean duration of life, which should consequently be 32 years and six-tenths. The table of Duvillard gives only 28¾ years for the mean duration of life before the Revolution; so that an encrease of three years appears, since that period to have been made to the term of human life; an improvement which may be ascribed to vaccination, and to the greater degree of comfort enjoyed by even the lowest classes. The preceding facts prove that a favourable change has taken place in the law of mortality, which many circumstances have for several years rendered apparent, not only in France, but also over a great part of Europe.*

RELIGION. — More than fourteen-fifteenths of the people of France profess the Roman Catholic faith; but the Charter grants freedom of worship to all other religious bodies. The remaining fractional part consists of various sects. About one million of people belong to the Reformed Church, the majority of whom are in the south of France, particularly in the departments of Gard, Ardeche, Drome, Lot and Garonne, Lozere, Deux Sevres, Herault, Tarn, Lower Charente, Gironde, Seine, and Aveyron. The Lutherans are still fewer in number, and are found chiefly in the departments of the Bas Rhine, Haut Rhine, Seine, and Isere. The Jews are met with principally in Paris, Marseille, Bordeaux, Strasbourg, Wintzenheim in the Haut Rhine, Lille, Metz, Nancy, Montpellier, Besançon, and Dijon. In Doubs and Vosges there are a few Anabaptists. A new sect, calling themselves the French Church have appeared since 1830. They do not acknowledge the authority of the Pope, and have their liturgy in French; but they have as yet acquired only a few churches, and a small number of proselytes in some of the towns.

The Protestants who adhere to the Confession of Augsburg, or the Lutherans, have a general consistory, the seat of which is at Strasbourg; and six inspections, of which four are in Bas Rhin, and one in Haut Rhin, on which the consistory of Hericourt in Haute Saone depends. The reformed Protestants, or Calvinists, have consistories, of which five form a synod, and oratorial churches in fifty-five departments. They have also a faculty of theology at Montauban. The Jews have a central consistory at Paris; and consistorial synagogues at Strasbourg, Colmar, Metz, Nancy, Bordeaux, and Marseille.

The salaries of both the Catholic and the Protestant clergy are paid out of the public revenues. The total amount of these, according to the budget of 1838, was 35,443,500 francs, or nearly £1,170,780 sterling. The cardinals are allowed about £1300 sterling; the archbishops about £800; the bishops about £600. The salaries of the *curés* and minor clergy vary from about £20 to £60. The total number of the Catholic clergy, in 1838, amounted to 37,079; of the Lutheran, to 388; of the Calvinist, to 345; and of the Jewish, to 94.

ECCLESIASTICAL DIVISIONS. — Though Popery is not now predominant, it may still be called the national religion; and for ecclesiastical purposes the kingdom is divided into 14 archiepiscopal provinces, including 14 archbishoprics and 66 bishoprics, or altogether 80 dioceses, as stated in the following table. The names of the pro-

* Annuaire pour l'an 1838 — par le Bureau de Longitude.

vinces are given in capitals, those of the archbishoprics in italics, and of the bishoprics in small Roman letters.

1. PARIS.—*Paris*, Chartres, Meaux, Orleans, Blois, Versailles, Arras, Cambray.
2. LYON and VIENNA.—*Lyon*, Autun, Langres, Dijon, Saint Claude, Grenoble.
3. ROUEN.—*Rouen*, Bayeux, Evreux, Seez, Coutances.
4. SENS and AUXERRE.—*Sens and Auxerre*, Troyes, Nevers, Moulins.
5. REIMS.—*Reims*, Soissons, Chalons, Beauvais, Amiens.
6. TOURS.—*Tours*, Le Mans, Angers, Rennes, Nantes, Quimper, Gannes, Saint Bricux.
7. BOURGES.—*Bourges*, Clermont, Limoges, Le Puy, Tulle, Saint Flour.
8. ALBY.—*Alby*, Rhodez, Cahors, Mende, Perpignan.
9. BORDEAUX.—*Bordeaux*, Agen, Angouleme, Poiters, Perigueux, La Rochelle, Luçon.
10. AUCH.—*Auch*, Aire, Tarbes, Bayonne.
11. TOULOUSE and NARBONNE.—*Toulouse*, Montauban, Pamiers, Carcassonne.
12. AIX, ARLES, and EMBRUN.—*Aix and Arles*, Marseille, Frejus, Digne, Gap, Ajaccio.
13. BESANÇON.—*Besançon*, Strasbourg, Metz, Verdun, Belley, Saint Die, Nancy.
14. AVIGNON.—*Avignon*, Nimes, Valence, Viviers, Montpellier.

With some exceptions, these dioceses comprehend each the department in which the archbishop's or bishop's see is situate. The exceptions are,—1. The diocese of *Rheims*, which comprises the department of Ardennes, and the arrondissement of Rheims, in the department of Marne; 2. The diocese of *Chalons*, which comprises the department of the Marne, with the exception of the arrondissement of Rheims; 3. The diocese of *Aix and Arles*, which comprises the department of Bouches du Rhone, with the exception of the arrondissement of Marseille; 4. The diocese of *Marseille*, which comprises that arrondissement only; 5. The diocese of *Lyon*, which comprises the two departments of Rhone and Loire; 6. The diocese of *Le Mans*, which comprises the departments of Sarthe and Mayenne; 7. The diocese of *Bourges*, which comprises the departments of Cher and Indre; 8. The diocese of *Limoges*, which comprises the departments of Creuse and Haute Vienne; 9. The diocese of *Poiters*, which comprises the departments of Deux Sevres, and Vienne; 10. The diocese of *Besançon*, which comprises the departments of Doubs and Haute Saone; 11. The diocese of *Strasbourg*, which comprises the Haut Rhin and Bas Rhin.

EDUCATION. — The *University of France* embraces the whole system of national education, and includes all the educational institutions in the kingdom, from the lowest schools up to the royal colleges. The university is placed under the direction of a council of six members, called the Royal Council of Public Instruction, of which the Minister of Public Instruction is the official president. It is composed of twenty-six academies, corresponding with the number of the Royal Courts, each comprising the same territorial departments, and established in the same chief town; with the exception of the academies of Cahors, Clermont, and Strasbourg, which are fixed in those cities instead of Riom, Agen, and Colmar, the seats of the Royal Courts within whose jurisdiction they are situate; and excepting also Bastia, which is placed under the academy of Aix. Each academy is governed by a rector and two inspectors, and includes one or more royal colleges and faculties. It is also invested with the superintendence of all the communal colleges, institutions, and pensions (boarding schools), normal schools (for the education of teachers), and primary schools, within the district. Attached to the Royal Council are ten Inspectors-General; and the kingdom is divided into ten districts, each of which is visited once a year by a different inspector, who reports the result of his observations to the Minister of Public Instruction. The communal colleges are supported principally by the communes in which they are situate. Some of them have endowments; but the majority depend chiefly for their support on the fees paid by the students. The professors or teachers receive but small salaries, varying from £40 to £120. The Royal Colleges or High Schools, are supported chiefly by Government; and the salaries of the professors, which are generally from £80 to £160, are paid from the budget of the Minister of Public Instruction. The students are divided into the two classes of *internes* and *externes*, or boarders and day scholars.

In 1833 a law was passed, ordaining that every commune by itself, or by uniting with others, should have one school of elementary instruction; that every commune the population of which exceeded 6000, should also have a school for superior instruction; and that every department should have a normal school, either by itself, or by uniting with some other department.

TABULAR VIEW of the INSTITUTIONS comprehended in the UNIVERSITY of FRANCE.

ACADEMIES.	*Departments.*	*Royal Colleges.*	*Professors.*	*Internal Students.*	*External Students.*	*Communal Colleges.*	*Institutions.*	*Boarding Schools.*	*Normal Schools.*	*Primary Schools.*
Aix,.....	4	1	14	160	230	16	5	41	2	1,659
Amiens,.....	3	1	12	121	180	10	2	50	2	2,697
Angers,.....	3	1	12	118	110	18	1	17	2	1,212
Besançon,.....	3	1	12	110	160	15	2	21	..	1,671
Bordeaux,.....	3	1	13	170	120	7	5	54	2	1,209
Bourges,.....	3	1	12	129	120	9	1	21	1	532
Caen,.....	3	1	15	212	290	16	1	25	3	2,340
Cahors,.....	3	2	22	90	160	9	1	47	2	1,451
Clermont,.....	4	3	42	287	292	12	..	30	4	1,121
Dijon,.....	3	1	13	88	150	20	..	36	2	1,855
Douai, ...	2	1	12	131	110	21	6	43	1	2,643
Grenoble,.....	3	1	14	133	141	7	4	25	2	1,120
Limoges,.....	3	1	11	88	220	9	5	18	3	264
Lyon,.....	3	1	20	276	264	6	10	52	3	1,470
Metz,.....	2	1	15	190	240	5	1	26	2	1,541
Montpellier,.....	4	2	23	199	256	17	2	36	..	1,766
Nancy,.....	3	1	14	110	260	15	..	25	3	2,444
Nimes,.....	4	3	39	365	226	10	2	26	4	1,594
Orleans, ...	3	2	24	241	286	5	3	31	2	730
Paris,.....	7	7	180	1,629	3,324	19	77	251	5	4,203
Pau, ...	3	1	12	57	90	10	1	32	..	1,734
Poiters,.....	4	1	15	130	201	14	4	34	1	1,536
Rennes,.....	5	3	33	346	407	18	3	35	2	941
Rouen,.....	2	1	17	164	491	9	3	68	2	1,712
Strasbourg,.....	2	1	14	121	203	12	1	15	2	1,543
Toulouse,.....	4	1	15	112	239	9	6	55	2	1,327
TOTAL,.....	86	41	626	5,779	8,870	318	146	1,114	54	42,318

The highest rank among these educational establishments is that of the "*Facultes*," a term which has superseded the use of the word "University," and corresponds in some measure to the Scottish use of the words "College" and "University." There are six faculties of Catholic theology, viz. at Aix, Bordeaux, Lyons, Paris, Rouen, and Toulouse; and two of Protestant theology, viz. one of the Lutheran or Augsburg Confession, at Strasbourg; and the other, of the Calvinist or Helvetic Confession, at Montauban, under the Academy of Toulouse. There are nine faculties of Law, viz. at Caen, Dijon, Grenoble, Paris, Poitiers, Rennes, Strasbourg, and Toulouse. There are three faculties of Medicine, viz. at Grenoble, Paris, and Montpellier; also 17 secondary schools of medicine. There are eight faculties of Science, viz. at Paris, Strasbourg, Caen, Toulouse, Montpellier, Dijon, Lyons, and Grenoble; and six faculties of Letters or Literature, viz. Paris, Strasbourg, Toulouse, Caen, Dijon, and Besançon. In order to become a student in the faculty of law or theology, a person must be possessed of a degree of Bachelor of Letters; and a course of three years in either faculty is requisite to obtain the degree of bachelor: for the degree of Doctor, four years; and to obtain the degree of Doctor in Theology, the candidate must defend a final and general thesis. Candidates for the degree of Doctor in Medicine must have a diploma of bachelor of letters, and also of sciences, and must go through a course of four years. The faculties of law and medicine at Paris are greatly distinguished; the former has 16 professors, and had, in 1836, upwards of 3000 students; the latter 27 professors, and, in 1836, about 4000 students.

According to M. Benoiston de Chateauneuf, the statistics of education in France, for several years previous to 1834, were as follows:—

Students in Law, . .	4,640	of whom 2,800	at Paris.
,, in Theology, . .	500	,, 140	Protestants.
,, in Medicine, .	1,950	,, 1,100	at Paris.
,, in Science, . .	2,135	,, 1,200	,,
,, in Letters, .	1,900	,, 1,500	,,
Total annual average,	11,109		

	Pupils.
Primary Schools (for boys, 31,420, for girls, 10,672), .	1,907,000
Institutions and Boarding Schools, ...	20,500
Carry forward, .	1,927,500

	Pupils.
Brought forward, .	1,927,500
Communal Colleges, ...	29,700
Royal Colleges, or High Schools, ...	11,000
	1,968,200
Students of Theology, in the Seminaries, . . .	13,000
Total, . .	1,981,200

The number of pupils in the normal schools may be about 2000; and it is probable that the number of children and youth who attend the primary schools, during some portion of the year, falls little, if at all, short of 4,000,000.

To the various schools above enumerated we must add: the school of charts (maps); the school of roads and bridges; the school of geographers—engineers; the school of miners at Paris, which possesses a complete cabinet of the mineralogy of France; the school of miners at St. Etienne; the school of singing and declamation; the schools of the fine arts, at Paris and Rome; special schools of mathematics, drawing, commerce and industry; the forest school of Nancy; the agricultural schools of Roville and Grignon; the schools of arts and trades at Chalons and Angers; the special school of the army staff; the military school of La Fleche; the school of maritime engineers at Brest; the school of shipmasters at Toulon, &c. &c. and, above all, the Polytechnic School of Paris, which was first established in 1794, and remodelled in its present form in 1822. The object of this institution is to furnish a continual supply of men capable of directing all the civil and military undertakings of the nation for the management of which science is necessary. The Minister of War has the ostensible direction, but the actual managers are a governor and a sub-governor, under whom are *chiefs des etudes* and *chefs de brigade*, who are advanced pupils, and who take charge of the rest by divisions. The pupils are selected by district examinations. Each pupil pays forty pounds a-year, and usually remains two years at the school, but never more than three. There are twenty-four royal bursaries for poorer candidates. All wear a uniform, and are kept under the usual forms of military discipline. Selected from the ablest youth of France, listening to the ablest lectures, aided by the best books, and having their attention seldom distracted from their studies by extraneous matters, the students of the Polytechnic School are distinguished for the proficiency which they attain.

GOVERNMENT. — The government of France is a hereditary constitutional or limited monarchy, founded on the charter granted by Louis XVIII. in 1814, and farther modified in 1830, by the representatives of the nation. The King is supreme head of the State; and his person is sacred and inviolable. Justice emanates from him, and is administered in his name, but the judges appointed by the Crown are not removable at pleasure. He possesses the right of pardoning criminals, and of commuting punishments; enjoys exclusively the executive power; is commander of the national forces by sea and land; can declare war and conclude treaties of peace, alliance, and commerce; and nominates to all the offices in the public service. He sanctions and promulgates the laws; but does not possess the power either of making or suspending them. The civil list is fixed at the beginning of every reign; and that of Louis-Philippe, the present king, amounts to 12,000,000 francs (£480,000), besides the produce of the Crown lands, which amounts to from £600,000 to £700,000. The Prince Royal, the presumptive heir to the throne, has an annual allowance of £40,000. The succession is limited to males.

The legislative power is vested collectively in the King, and the two great National Assemblies, called the Chamber of Peers and the Chamber of Deputies. The Peers are nominated by the King for life, and their number is unlimited. Peers are not admitted to the Chamber under 25 years of age, and have no vote till they reach 30. All the princes of the Royal Family are peers by right of birth. The Chancellor of France is the official President, or, in his absence, a peer nominated by the King.

The Chamber of Deputies is composed of 449 members chosen by the electoral colleges for five years. The deputy must be a Frenchman not under thirty years of age, with this qualification, that he pays 500 francs (£25) of taxes; but if there are not in the department fifty persons of the legal age, who pay at least the requisite amount of taxes, the number is completed by those who pay the next highest rates. One half of the deputies for each department must be residents in it. The Chamber elects a

president at the beginning of each session. Each elector must be a Frenchman, not less then twenty-five, and pay 200 franes (£8) of taxes. The number of electors in 1834 was about 190,000.

The King appoints the executive ministers, who are generally the Minister of War; the Minister of the Marine; the Minister of Justice and of Public Worship; the Minister of the Interior; the Minister of the Finances; the Minister of Foreign Affairs, and the Minister of Public Instruction. The ministers are responsible, and may be prosecuted; in which case they are arraigned by the Chamber of Deputies, and judged by the Chamber of Peers. The ministers are assisted by the Council of State, in which all projects of law, and all ordonnances are prepared. The four committees of this council, besides, take cognizance of the disputes, which arise between the different branches of the public administration; of the security (caution) of administrators and overseers; and of conflicts of jurisdiction between the judicial and the administrative authorities.

All Frenchmen are equal in the eye of the law, without respect to rank or title; are admissible to civil and military employments; and contribute, without distinction, in proportion to their fortune, to the public revenue of the state. They possess the most perfect freedom of religious opinion; and are at liberty to print and publish their opinions on religion, morals, and politics, in conformity with the law. Criminal causes and delinquencies of the press are tried by jury; crimes involving treason against the State are judged by the Chamber of Peers. The tribunals of correctional police, without a jury, take cognizance of petty crimes and misdemeanours; the civil tribunals are the judges in actions which arise between private individuals who are not merchants, and in private matters; and the tribunals of commerce take cognizance of affairs purely commercial. The powers of the justices of peace are limited to cases of trifling importance.

No tax can be imposed or levied without the consent of the two Chambers, and the sanction of the King; and no bill can pass into a law unless it have been freely discussed, and agreed to by the majority of each of the two Chambers. The land-tax is granted only from year to year. The King convokes the Chambers every year; he prorogues and may dissolve the Chamber of Deputies; but in the latter case, he must convoke a new one within three months.

ADMINISTRATIVE DIVISIONS. — Before the revolution of 1789, France was divided into thirty-three governments or provinces, of very unequal extent, which were subdivided into generalities and sub-delegations. It is now divided into 86 departments or prefectures, named generally after their principal river, or mountain, or some other natural feature or locality. These departments are divided into 363 sub-prefectures or arrondissements; these into 2845 cantons; and these into 38,623 communes or parishes. Each department is placed under the charge of a prefect; each arrondissement, of a sub-prefect; and each commune, of a *maire*, assisted by one or more *adjoints*. There are, besides, in each department a *directeur de l'enregistrement et des domaines*, a *directeur des contributions directes*, a receiver-general of finances, a chief engineer of roads and bridges, a *marechal de camp*, a military sub-intendant; a company of stationary men-at-arms *(gens d'arms)*, and an assize court. In each arrondissement there is a *tribunal de première instance*, and in each canton a *juge de paix*. In the more important cantons are also found the seats of royal courts, military divisions, universities, &c.

The prefect of each department is in some degree the representative of the supreme power within his own district. As invested with the high police of his department, he gives orders to the military authorities, which they are bound to obey; and, as officer of the judiciary police, he often conducts the prosecutions of the king's servants before the tribunals. He lays down the principles of the departmental budget, and discusses them with the general council. He regulates the budgets of the small communes, and transmits to the minister those of the large communes, accompanied with his observations. He presides over the recruiting service; superintends the administration of the finances; and, in these different characters, corresponds with all the ministers. Assisted by the council of the prefecture, he forms a tribunal of administrative justice of the first instance, subject to the Council of State at Paris, which is supreme. Once a-year the general council of the department, composed of as many members as there are cantons, but not exceeding thirty, is assembled by virtue of a royal ordonnance, to audit the prefect's accounts; to apportion the direct taxes among the arrondissements; to determine upon the claims for reduction made by the councils of the arrondissements, cities, burghs, and villages; and, within the limits of the

law, to fix the number of additional *centimes* required to be levied for the departmental expenses. The council of the arrondissement, consisting of not less than nine members, performs the same duty towards the sub-prefect in his narrower sphere; expresses its opinion upon the state and the wants of the arrondissement, and addresses the prefect, who decides upon them. The municipal council, which is composed of from 10 to 36 members, according to the importance of the communes, in concert with the maire, attends to the special interests of the commune, duties *(octrois)*, roads, common goods, local receipts and expenses. The members of the general councils of the department and arrondissements are named by the electoral colleges; those of the municipal council are appointed by the assembly of communal electors.

The prefect is paid by Government in proportion to the population and the extent of his department; the salary accordingly varies from £1600 a-year to £400. The sub-prefect has a salary of £160, and the councillors of the prefecture are also paid by Government.

Judiciary Establishments. — Justice is administered throughout France in a manner perfectly uniform. In each canton there is a *Juge de Paix* (justice of peace) who decides all matters in dispute, not exceeding the value of £2. Next is the *Civil Tribunal*, or *Tribunal de Première Instance*, in each arrondissement, which judges in all civil matters beyond the powers of the juges de paix, and receives appeals from their decisions. The judgments of this tribunal are final in all matters not exceeding the value of £40; in cases above that value, parties may appeal to the *Cour Royale*. In criminal matters the lowest court of jurisdiction is the *Tribunal of Municipal Police;* above which are the *Tribunals of Correctional Police*, from whose decisions parties may likewise appeal to the Cour Royale; but in serious cases, amounting to crime properly so called, the cause is carried before the *assizes*, composed of 12 jurymen, under the direction of a member of the Cour Royale. Commercial questions are tried by the *Tribunals of Commerce*, which are established in the most important commercial towns; but from their decisions an appeal may be taken to the Cour Royale in matters which exceed the value of £40. The *Cours Royales* are established in the principal towns of the kingdom, and are all formed upon the same model, and possessed of equal power, though they differ materially in extent of business and in number of members. The collective number of judges in all the Royal Courts is not less than 900. Their salaries are very moderate, viz. from £100 to £300 a-year, according to the population. In the manufacturing and maritime towns there exist *Councils of Discreet Men (prud hommes)* who take cognizance of petty disputes, which arise in workshops between workmen and their masters; or in seaports between shipmasters and merchants, &c. In each military division, and in each chief town of a maritime arrondissement, there is a *Council of War*, or a *Maritime Council*, which takes cognizance of the crimes and misdemeanours of soldiers and sailors, the judgments of which may be modified by a superior court called the *Council of Revision*. Superior to all these tribunals, courts, and councils, is one supreme court, to which all parties may appeal, viz. the *Cour de Cassation*, composed of the best lawyers in the kingdom, which has its seat in Paris. This court is composed of three chambers, each consisting of 16 members and a president, and includes with the *premier president* a total of 52; and besides judging in appeals upon points of law, it determines all differences respecting jurisdiction between the courts, and exercises a general controul over them all. It would thus appear that the Royal Courts *(cours royales)* are the principal pivots of the judiciary system of France. Of these there are 27 established in the cities of Agen, Aix, Amiens, Angers, Bastia, Besançon, Bordeaux, Bourges, Caen, Colmar, Dijon, Douai, Grenoble, Limoges, Lyon, Metz, Montpellier, Nancy, Nimes, Orleans, Paris, Pau, Poitiers, Rennes, Riom, Rouen, and Toulouse.

The laws administered by these various courts are contained in five codes, entitled respectively: 1. *Code Civil;* 2. *Code de Procedure Civil;* 3. *Code de Commerce;* 4. *Code d'Instruction Criminelle:* 5. *Code Penal.* The first, or civil code, defines the rights of persons in their various civil capacities, and the modes of acquiring and holding property. The code of civil procedure prescribes the manner of proceeding before the different courts; the manner of carrying their sentences and decisions into effect; and regulates the forms of arbitration, taking possession of an inheritance, and of separation of property between husband and wife. The code of commerce defines the duties of certain officers or commercial agents, such as sworn brokers and appraisers; treats of partnerships, sales, and purchases, bills of exchange, shipping, freight, insurance, temporary suspension of payment, and bankruptcies. The code of

criminal instruction explains the duties of all public officers connected with the judicial police; prescribes the rules regarding evidence, regulates the manner of appointing juries, and the questions to which they are competent; prescribes and defines the mode and nature of the courts appointed to try state offences, named *Cours Speciales* under Buonaparté, and *Cours Prevotals* under the Bourbons. The penal code describes the punishments awarded for offences in all the variety of their gradations, which are classed under two general heads, viz. 1. State offences, such as counterfeiting coin, resisting police-officers, sedition, rebellion; and 2. Offences against private individuals, as calumny, false evidence, manslaughter, murder.

Public Revenues.—The public revenue arises from direct or indirect taxes. The direct taxes are:—1. *Contribution fonciere*, or land-tax; 2. *Contribution personnelle, et mobiliere*; 3. A tax on doors and windows; 4. *Droits de patente*, or a licence-duty on particular trades and professions, and a duty on mines. The indirect taxes consist chiefly of the *droits reunis*, or excise duties on articles of consumption, of stamp-duties, registration duties, duties on carriages, on canals and ferry-boats, on gold and silver plate, lotteries, and gaming-houses. A considerable revenue is raised also from the monopoly of tobacco and gunpowder; from the post-office; and from the *octroi* or custom-duty on all articles entering large towns, one tenth of which is paid into the royal treasury, and the remainder is applied to local purposes. The customs form an important branch of the revenue of France. The total public revenue used to amount on an average to about 1,000,000,000 of francs, or about £40,000,000 sterling; but the estimated revenue for the year 1843 was £50,257,223; and the estimated expenditure £4,640,159 more than the income. The land-tax forms nearly a third part of the revenue. Besides their contribution to the public revenue, the communes are assessed for their own local expenses. The local expenditure is defrayed partly from *octrois*, which amount throughout France to forty millions of francs per annum, and from other sources, the total amount being £8,000,000. The public debt considerably exceeds £200,000,000 sterling, and has been for several years increasing. The interest for 1843 amounted to £15,017,826.

The system of collecting and managing the revenue is simple and precise. Every year, on the proposal of the Minister of Finance, the two Chambers vote the amount of the imposts, and divide among the 86 departments, according to their extent, industry, population, and supposed ability, the amount of the direct contribution. The prefect, with the advice of the general council, divides among the arrondissements the sum-total with which the department is charged. The sub-prefect, assisted by the council of the arrondissement, subdivides this allotment among the cantons and the communes; and, finally, the maires, with the help of the municipal council, and the *commissaires repartiteurs*, assign to each inhabitant the portion which he has to pay. As the indirect contributions are levied upon articles of consumption, the law cannot fix the amount payable by the citizens, which, of course, depends upon the wealth or the wants of each. The collection is entrusted to six principal administrations, entirely independent of each other, but all responsible to the minister of finance. These are:—

1. The Administration of the Direct Contributions:—which takes charge of the return of the amount of the land-tax, the impost on moveable property, doors and windows, patents, &c. &c.
2. The Administration of Indirect Contributions:—which takes charge of the taxes on wine, brandy, beer, cider, inland navigation, the tenth of the customs of cities and towns, and the monopoly of tobacco and gunpowder.
3. The Administration of the Enregistrement and Domaines:—which takes charge of the duties on the registration of public acts, upon timber, and newspapers; and the revenues and prices of the public lands, fines, expenses of criminal and military justice, &c. &c.
4. The Administration of the Postes:—which takes charge of the tax upon letters and newspapers; of the duty of 5 per cent. on the transmission of silver; and of the revenue arising from the mails and packet-boats, &c.
5. The Administration of the Customs:—which takes charge of the duties imposed upon the importation and exportation of merchandise, external navigation, the consumption of salt, and the recovery of seizures and confiscations effected by its officers.
6. The Administration of the Forests:—which takes charge of the price of wood and other produce of the state forests, as well as of their preservation, &c. It is divided into 32 *conservations*, or districts, each entrusted to the care of a conservator, who has under his orders sundry inspectors, and horse and foot guards. There are, besides, four *directions forestieres*; the first comprehending the departments which form the basin of the Seine; the second those of the Loire; the third, those of the Garonne; and the fourth, those of the Rhone and the Saone; whose business it is to select, cut, and transport the timber used in the royal dockyards.

Besides these special administrations, there are some other receipts of small importance; but all the public revenues, however collected, come at last into the hands of the agents of the treasury, called particular receivers, and general receivers; who, in turn, hand them over to the payers, another class of treasury agents, specially charged with paying the expenses of government. Sometimes also, by direction of the Minister of Finance, the receivers-general transmit their funds to Paris, or to some

other place, according as the public service renders it necessary. A receiver-general and a payer are stationed in each department, and in each sub-prefecture there is a particular receiver.

The operations of all these boards, and their respective officers, are superintended by special inspectors, who are dispersed in the different parts of the kingdom, and whose duty it is to examine carefully the registers and cash accounts of even the smallest localities. And, at last, after the Minister of Finance has verified the accuracy of his agents, he has to submit their accounts to the *Cour des Comptes* (court of accounts), whose seat is at Paris, and which has been instituted for the purpose of examining the accounts of public receipt and expenditure, and of balancing and settling all intromissions connected with the revenue.

Military Administration.—France is divided, for military purposes, into twenty-one provinces, named "military divisions." The chief command of each is intrusted to a lieutenant-general, who has under his orders as many field-marshals as there are departments in his division; and under the command of these officers are placed all the corps of the army stationed in their respective districts. The administration is intrusted to the *Corps de l'Intendance*. In the capital of each division there is a military intendant, and a military sub-intendant in each department or subdivision. The following table contains the names of the military divisions, and of the departments contained in each.

Divisions.	Departments.
1. Paris, . .	Seine, Seine and Oise, Seine and Marne, Aisne, Oise, Loiret, Eure and Loir.
2. Metz, . .	Ardennes, Meuse, Marne.
3. Chalons, . .	Moselle, Meurthe, Vosges.
4. Tours, . .	Indre and Loire, Loir and Cher, Mayenne, Sarthe, Vienne.
5. Strasbourg, .	Haut Rhin, Bas Rhin.
6. Besançon, .	Doubs, Jura, Haute Saone.
7. Lyon, . . .	Ain, Isere, Drome, Hautes Alpes, Loire, Rhone.
8. Marseille, .	Basses Alpes, Vaucluse, Bouches du Rhone, Var.
9. Montpellier, .	Ardeche, Gard, Lozere, Herault, Aveyron.
10. Toulouse, .	Haute Garonne, Tarn, Tarn and Garonne, Lot.
11. Bordeaux, .	Gironde, Charente, Charente Inferieure, Dordogne, Lot and Garonne.
12. Nantes, .	Loire Inferieure, Deux Sevres, Vendee, Maine and Loire.
13. Rennes, . .	Cotes du Nord, Finistere, Ille and Vilaine, Morbihan.
14. Rouen, . .	Calvados, Eure, Manche, Orne, Seine Inferieure.
15. Bourges, .	Cher, Indre, Creuse, Nievre, Haute Vienne.
16. Lille, . .	Nord, Pas de Calais, Somme.
17. Bastia, . .	Corsica.
18. Dijon, . .	Aube, Haute Marne, Yonne, Coté d'Or, Saone and Loire.
19. Clermont, .	Allier, Cantal, Puy de Dome, Haute Loire, Correze.
20. Bayonne, .	Landes, Basses Pyrenees, Gers, Hautes Pyrenees.
21. Perpignan, .	Pyrenees Orientales, Aude, Arriege.

Maritime Administration.—The maritime regions of France are divided into five arrondissements, which are again subdivided into quartiers. In each arrondissement there is a maritime prefect, who takes charge of several ports. The following table contains the names of the chief towns of each arrondissement, and of the principal ports which belong to it.

I. Arrondissement, divided into 12 quartiers. Cherbourg, chief town. *Le Havre, Dunkerque, Calais, Boulogne, Saint Valery, Dieppe, Fecamp, Rouen, Harfleur, Caen, La Hogue.*

II. Arrondissement, divided into 8 quartiers. Brest, chief town. *Granville, Saint Malo, Dinan, Saint Brieuc, Morlaix, Paimpol, Quimper.*

III. Arrondissement. divided into 7 quartiers. L'Orient, chief town. *Nantes, Auray, Vannes, Belle-isle, Le Croisic, Paimbœuf.*

IV. Arrondissement, divided into 16 quartiers. Rochefort, chief town. *Marennes, La Rochelle, l'Ile de Re, les Sables, Royan, Blaye, Bordeaux, Pauillac, Langon, Libourne, Dax, Bayonne, Saint Jean de Luz, Agen, Villeneuve d'Agen.*

V. Arrondissement, divided into 15 quartiers. Toulon, chief town. *Arles, Narbonne, Agde, Marseille, Cette, la Ciotat, la Seyne, Saint Tropez, Martigues, Antibes, Cillioure, Ajaccio.*

Forts and Naval Stations.—France contains many fortresses, some of which are reckoned among the strongest in Europe. The principal are—Dunkerque, Bergues, Lille, Douai, Cambray, Valenciennes, Condé, Maubeuge, Avesnes, Rocroy, Givet, Charlemont, Mezieres, Sedan, Thionville, Metz, Bitche, and Weissembourg, along the northern frontier; Haguenau, Strasbourg, Schelestadt, and Neuf Brisach, along the Rhenish frontier; Belfort, Besançon, and l'Ecluse, along the Swiss frontier; Grenoble and Briançon, along the Alpine frontier; Perpignan, Bellegarde, Mont Louis, Saint Jean Pied de Port, and Bayonne, along the Spanish frontier. Seven detached forts, recently erected round Lyons, have made that city a stronghold of war; Langres and Chaumont are also intended to be made fortresses of the first class. The total number of fortified places is 121; of which 21 are of the first class, 48 of the second, and 52 of the third. The naval stations and dockyards are—Brest, Toulon, Rochefort, Cherbourg, and L'Orient: corvettes are also built at Bayonne, Nantes, and Saint Servan.

Army and Navy.—The French have always been fond of military glory, and have invariably placed the most unhesitating confidence in their prowess in war. Their arms have, indeed, at various times been crowned with the most splendid success, and yet no nation has ever experienced greater reverses, or more signal defeats.

At present the French Government maintains a large standing army, amounting, even on the peace establishment, to 344,000 men. In 1843, the army was composed as follows:—I. INFANTRY,—75 regiments of infantry of the line, and 25 regiments of light infantry, each containing three battalions of seven companies; 10 battalions of foot chasseurs, each consisting of eight companies; 1 regiment of zuaves, employed in Algeria, forming three battalions of 9 companies each; 3 battalions of African light infantry, each containing 10 companies; 12 companies of discipline, and one foreign legion, forming 2 regiments of 3 battalions, each consisting of 8 companies. II. CAVALRY,—2 regiments of carabiniers; 10 of cuirassiers; 12 of dragoons; 8 of lancers; 13 of chasseurs; and 9 of hussars,—amounting together to 54 regiments, of 5 squadrons each; and 4 regiments of African chasseurs, of 6 squadrons each. III. ARTILLERY,—10 regiments, of 15 batteries each, (3 of horse and 12 of foot); 4 regiments, of 14 batteries each, (2 of horse and 12 of foot); 1 regiment of pontooners of 12 companies; 12 companies of workmen; 1 half company of armourers; and 6 squadrons of artillery train, each of 8 companies. IV. ENGINEERS,—3 regiments, each of 2 battalions of 8 companies, whereof 1 consists of miners and 7 of sappers, besides a company of *sapeurs-conducteurs* for each regiment; and 2 companies of workmen. V. GENDARMERIE (Armed Police),—25 legions in France, and 1 in Algeria; 1 battalion of voltigeurs, of 4 companies, in Corsica; 1 legion of municipal guard at Paris, and 1 battalion of firemen, containing 5 companies, also at Paris. VI. VETERANS,—8 companies of non-commissioned officers; 10 companies of fusileers; 4 companies of horsemen; 13 companies of cannoneers; 1 company of engineers; and 2 companies of gendarmerie. VII. ORDNANCE,—battalion of workmen, of 10 companies and a depot; 4 squadrons of military baggage train, and 4 companies of workmen thereto attached.

The army is recruited partly by voluntary enlistment, and partly by conscription; but the latter has been greatly modified since the time of the Emperor Napoleon; the numbers required being now limited to 40,000 annually, and the period of service to six years, while great latitude is allowed in the procuring of substitutes.

The gradations of military rank are, sub-lieutenant, lieutenant, captain, chef d'escadron, colonel, marechal de camp, lieutenant-general, and marechal of France. Promotion is never obtained by purchase, and not often by special order; more than half the appointments take place by seniority. The number of marechals of France is at present ten; but by the new regulations it is to be fixed at eight in time of peace, and may be increased to twelve in time of war.

Not content with military glory by land, the French have been equally ambitious to become a great naval power, but have not hitherto succeeded in rendering themselves formidable by sea. After a century and a half of continual effort, and frequent conflict, their fleet was almost annihilated by the battle of Trafalgar, and subsequent minor engagements during the late war. Since the peace, the Government have paid the utmost attention to the navy, and are now prepared, in the event of war, to send a powerful fleet to sea. According to the budget of 1839, there were in active service, 8 ships of the line, 12 frigates, 16 corvettes or sloops, 24 brigs, and numerous other vessels; and the amount of their crews was 20,317 men. The number in commission at 1st January 1840, was:— Slips of the line 13, from 80 to 120 guns; frigates, 13; corvettes, 19; brigs, 33; gunbrigs, 9; schooners, cutters, advice-boats, transports, &c. 578; steam vessels, 25. By royal ordonnance of 1st January 1837, the navy in time of peace is fixed at 40 ships of the line, 50 frigates, 40 steamers, and 190 smaller vessels. The smaller vessels are to be kept afloat; but only half of the ships of the line and frigates are intended to be launched, the other half to be kept on the stocks in different stages of building.

As soon as a young man has been apprenticed in the coasting trade, or has made two voyages at sea, or has been employed two years in the fisheries, he is registered in the lists of the districts to which he belongs. Besides this class of mariners, all other persons, be their ages what they may, who enter merchant vessels, or engage in the fisheries, are inscribed in the registers as soon as they have seen service; nor is any exception made in their favour, though they may have previously stood their chance of the ballot for the army, or have served their time in its ranks. The record of their names in the register of mariners is all that is necessary to fix that liability upon them; and in their case, as well as in that of every regularly bred seaman, this liability continues till the age of fifty. They all become as much the property of the state as the Russian serf is of the landowner at the moment of his birth. Whenever sailors are required for the naval service, the Naval Prefect announces to the Local Supervisor or Commissary, the quota of men to be supplied from each district. The latter thereupon directs the Syndic of the navy to send him twice or thrice the number of men required, and he makes such selections from them as he thinks proper. No exemption whatever is admitted; and there is no appeal from the will or caprice of the commissary. The total number of individuals, of all descriptions, employed in the sea service, as at 1st January 1838, was 110,589, among whom there were 10,836 captains, shipmasters and pilots; and of that number 272 belonged to the public, and 6946 to the mercantile service.

As connected principally, though not exclusively, with the army and navy, we may mention the Order of the Legion of Honour, which was instituted by Napoleon. The usual title to admission is the discharge of important duties, either civil or mi-

litary; and, in time of war, the performance of some action of great bravery. The gradations are: — 1. Chevaliers, of whom the number is unlimited; 2. Officers, limited by laws of the order to 2000; 3. Commanders, limited to 400; Grand-Officers, to 160; and Grand-Crosses, to 80; but on 1st January 1840, the actual number of the members was: — Grand-Crosses, 96; Grand-Officers, 206; Commanders, 829; Officers, 4491; Chevaliers, 44,393; in all, 50,015.

Productive Industry. — It was only after the accession of Charlemagne that the different branches of trade and industry began to be developed in France. That prince was the first to encourage them, by establishing amicable relations with Persia; receiving into his dominions Italian workmen; repressing the excesses of the Norman pirates; and by drawing manufactures from the cloisters to spread them throughout the country. But after his death the feudal system spread its roots everywhere, and choked the germs of rising prosperity. Philippe Augustus relieved the artisans from the state of oppression in which the barons had kept them; and the crusaders, who returned from the Holy Land, introduced into France the taste for many luxuries which were till then unknown. To supply the wants thus created, people began to prepare perfumes, to distil wine, and manufacture various kinds of cloth. Saint Louis seconded this movement by his wise laws, and Charles VII. exercised his power in restraining monopolies. The luxury of the Court of Francis I. gave birth to the silk-manufactures of Lyons. Henry IV., not content with protecting agriculture, introduced besides several new branches of industry; and in the reign of Louis XIV., under the administration of Colbert, new roads were made into the interior, and new markets thrown open for foreign commerce. The workmen of Venice and Flanders filled the workshops of France; and during an active period of 20 years, many new establishments were erected. But the death of Colbert, and the revocation of the edict of Nantes, A. D. 1685, ruined all those bright prospects. After that period nothing could overcome the obstacles which were opposed to the free development of French industry. The abolition of exclusive privileges *(maitrises et jurands)*, and corporations, could alone give it a strong and lasting impulse; and this was effected by the revolution of 1789. Science then came to the aid of industry, and in a few years enabled it to supply the numberless demands made upon it, by the state of warfare with the rest of Europe in which France so long remained. Its progress has since been always sure, with the exception of the check which it received in 1814 and 1815 by the foreign invasion which took place in those years.

In *agriculture*, the mischievous system of fallows has in many places given way to a regular succession of crops; the breeds of domestic animals have been improved by proper crossings; and the opening of numerous roads by Government, have contributed to the bringing of new land into cultivation, and the culture of new kinds of produce. Among the articles of produce recently introduced, the first in importance is beet-root, which, according to the Statistique de la France, produced in 1836, 48,968,805 kilogrammes (45,484 tons) of raw sugar; in the manufacture of which about 120,000 workmen, and a capital of £2,400,000 are employed.

There is no country where landed property is so much divided as in France. The soil subject to taxation, amounting to 130,787,160 acres, is possessed by 10,896,682 tax-payers, and is divided into 123,360,338 parcels; but as a very large proportion of those proprietors are fathers of families, whose children have not yet come into possession of the shares which will ultimately fall to them, while all these tax-payers are heirs more or less near, it must necessarily happen that property will become more and more divided. From this it will at once appear how important to France agricultural industry is, the persons who have direct interest in it being in the proportion of five to one of the entire population. Nor is this all: the value of landed property, and the capital employed in cultivating it, are estimated at £1,920,000,000, and the debt secured upon it at £400,000,000, which still farther increases the number of people interested in its prosperity. Nevertheless, M. Mathieu de Dombasle estimates the number of acres which yearly lie fallow at 24,750,000. The total produce of agricultural industry is estimated by him at £199,200,000. In this estimate, the cercalia amount to£108,000,000, and the vineyards to £32,000,000. Of cattle the yearly produce is estimated at 40,000 horses, 800,000 beeves, and 5,200,000 sheep; to which is to be added the value of from 30 to 35,000,000 fleeces wool, valued at about £8,400,000.

Even in the north and north-east of France the farms are of small extent. To occupy 200 acres, or to pay a rent of £200 a-year, places a man in the foremost rank of farmers. Larger possessions are common in pastoral districts; but such districts are rare; and in the greater part of the kingdom the farms under tillage are of 50,

40, 30, 20, or even 10 acres, there being, it is computed, not less than 3,000,000 of such petty occupancies. The peasantry, though exceedingly illiterate, are by no means a slow or phlegmatic race. They exhibit, like the rest of their countrymen, no small degree of sprightliness and activity in the individual, with very little of concert or combination in the mass. They are content to hand down the family possession from father to son, without any idea of changing their mode of life. The houses of the farmers, and still more, those of the cottagers, are poor, dirty, and comfortless; their implements are equally rude; their harrows have wooden teeth; and even the ploughs in some less cultivated districts are almost entirely of the same material. The cart in common use is an awkward medium between a cart and a waggon. Corn and hay are not stacked but housed; the winnowing machine is nearly, and the thrashing machine entirely, unknown. Thrashing is generally performed with the flail, and in the open air. In the south of France the antiquated mode of treading out the corn by horses or mules is still prevalent. The food of the peasantry is exceedingly simple, and the villages which they inhabit are often ill situate, and ill built. The purchase of land is the favourite mode of investing money in France. Land generally sells at twenty-five years purchase, while the public funds seldom bring above sixteen or eighteen. There is a corn law, which permits exports and imports only when the home market shall be above or below a specific rate. The chief difficulty which the Government has to contend with in the corn trade, is the popular prejudice that freedom of export raises the home price; a prejudice the opposite of that of British landholders, whose apprehension is, that freedom of import will lower the home price. The south of France, in consequence of being in a great degree appropriated to the culture of the vine and the olive, requires almost every year an importation of corn. The case is different in the north; yet even there, the smallness of the farms, the great consumption of bread, which forms a part of every meal, and the want of agricultural capital, are great drawbacks on exportation.

Arts and Manufactures have been as rapidly progressive as agricultural improvement. In 1835, there were 1,100 steam-engines at work in the different workshops and manufactories of France, amounting to 16,000 horse power. The number of manufactures, works, and manufactories in operation, amounted in 1834 to 38,030; and of forges and great furnaces to 4,412. Immense progress has been made in the arts of metallurgy, dyeing, the preparation of animal substances, and the weaving of different kinds of cloth. But it is in the manufacture of cashmere shawls and damasks, paper, watches, and clocks, fine and common pottery, in lithography, in dyeing silk and cotton thread and tissue, in paper staining, cutting and polishing crystals, the fabrication of arms, and the preparation of chemical substances, that the greatest progress and improvement have been effected. The digging of coal has also been greatly extended; the produce, nevertheless, is not yet sufficient to supply the demand; for while 3,200,000 tons are consumed, only 2,400,000 are produced by the native pits. The establishment of a great number of furnaces, the introduction of heated air into the process of smelting, and the use, which is becoming daily more general, of iron in buildings, have given a great impulse to the iron trade. According to the report of the board of roads and bridges for 1835, the yearly produce of the working of metals and mines amounted to £5,960; the fourth part of the value of the cotton, and a little more than a third of the woollen manufactures. The total produce of the mineral and metallurgic industry of France, comprising manufactures in which fire is the principal agent, such as glass and pottery, lime and plaster kilns, and the principal chemical works, amounts to £12,240,000 yearly. These give employment to 200,000 workmen. The 200 glasshouses in which glass and crystal are manufactured, yield an annual produce of £1,200,000.

The woollen manufacture is one of the oldest and most widely diffused. The finest qualities of cloth are made at Sedan, in Champagne, and at Louviers in Normandy, where only merino wool is used. The mountainous districts of Languedoc, which contain great flocks of sheep, are the seat of the manufacture of serges, tricots, and other coarse woollens, great part of which is made by the peasantry at home, during the intervals of their outdoor labour. A highly finished species of woollen manufacture, that of shawls, veils, ladies' cloth, &c. has been introduced in the present age; and at Rheims, the chief seat of this important branch, not fewer than 20,000 workmen are employed in it. Similar articles are made in Paris; and the French shawls, in particular, now rival in beauty those of the East. The total value of the wool manufactured is about £4,000,000 sterling; and that of the cloth produces about £9,000,000, of which only a tenth part is exported.

The cotton manufacture was first introduced about 1770; and, since 1812, has

probably been tripled. The principal districts engaged in it are—Rouen and the adjacent towns in Normandy; Lyon and Tarrare; Lille, Cambray, and other places in French Flanders; Paris, and its neighbourhood; St. Quentin, Abbeville, Amiens, and other towns in Picardy; Troyes, and the adjacent towns in Champagne; Mulhausen, Bischweiller, and other places in Alsace. The total number of people employed seems to be about 200,000.

The linen manufacture is a very important branch of industry, and gives employment to a large number of persons. In the north, particularly, every farmer, and almost every cottager, covers a little spot with hemp or flax sufficient to employ his wife and daughters in spinning during the year. In Normandy, Lisieux, Dieppe, the neighbourhood of Le Havre, Yvetot, Bolbec, and the more inland towns of Vimoirtiers and Domfront, are all celebrated for one or more branches of the linen manufacture. In Rennes, St. Malo, and Vitre, in Bretagne, coarse linen, canvas, and sacking are manufactured; but Anjou affords a much superior article; the *toiles de Laval* have long been in repute, and give employment in Laval and the contiguous towns, to nearly 25,000 workmen. Lille, and its populous district, contain very extensive manufactures of fabrics of hemp and flax; where the number of workmen employed is not less than 50,000. Fine linen, as well as fine cotton cloth, are manufactured at St. Quentin, in which, and in the neighbourhood, 40,000 workmen are employed. In Dauphiné, also, linen cloth of various qualities is manufactured to a considerable extent. Cambric, thread, gauze, and lawn, rank among the leading manufactures of the north-east of France; and are produced at St. Quentin, Valenciennes, Cambrai, Douai, Chauney, and Guise. The manufacture of lace is still more general, and large quantities of it are produced at Valenciennes, Dieppe, Alencon, Caen, Bayeux, and Argentan. There are also considerable manufactures of printed linens, and the dyeing of linen thread gives rise to an extensive trade. At Rouen and in its neighbourhood, this branch of industry is carried on, and linen articles of great variety are there produced, for which there is a ready demand.

Paper is manufactured in great perfection; and the annual produce is valued at £1,000,000 sterling. The paper of Annonay has long been famous.

In the manufacture of silk, France possesses a decided superiority over any other country in Europe. Mulberry trees, which are indispensable for the support of the silk worm, were introduced in the fifteenth century, and were first planted near Tours. That town was the seat of the earliest silk manufactures; and it was not till 1660 that the culture of the mulberry was carried southward. It has now been extended to twelve departments:— Indre and Loire, Allier, Ain, Loire, Isere, Ardeche, Drome, Vaucluse, Gard, Herault, Bouches du Rhone, Var. The mulberry thrives on a variety of soils, and may be planted with success in neglected borders, or waste lands. But besides the raw material which is produced in the country, an equal quantity of foreign silk is imported, chiefly from Italy. The manufacture of silk is considered an important branch of industry, and is extensively prosecuted in different parts of the kingdom; and particularly in Paris and Lyon. In the latter city, which is its principal seat, and where it is carried on in all its branches to a prodigious extent, it gives employment to not fewer than from 60,000 to 70,000 persons.

It would be tedious to enumerate the minor manufactures of France. Leather is manufactured to the yearly value of £3,000,000 sterling. Jewellery, and watch and clock work are manufactured to a considerable extent, particularly in Paris; and the number of new watches made every year throughout the kingdom exceeds 300,000. Paris is also remarkable for other fabrics of taste and luxury. The porcelain of Sevres, near St. Cloud, and the beautiful but very expensive tapestry of the Gobelins, are highly valued. Both of these establishments have long been conducted by Government at an annual loss, and are now maintained on a reduced scale. Soap, oil, liquors, hats, perfumery, earthenware, saltpetre, and other chemical articles, are also manufactured to a great extent. The total computed value of goods manufactured in France is about £76,000,000 sterling. Trade is much more confined to the supply of the home market than in England. Her imports are large only in cotton and silk; in wool and iron the importation is inconsiderable; while in flax, hemp, and leather, it may be termed insignificant. In exports the limitation is still more striking; the hardware, linen, woollen, cotton, leather, and, in a great measure, the silk likewise of France, is confined to the home market; and in consequence the productive industry of the country is much less subject than that of Britain to sudden fluctuation.

The *fisheries* of France are those on the coast and those at a distance, particularly the cod-fishery on the bank of Newfoundland, and the whale-fishery. The home fisheries, being little calculated for forming seamen, have been left to their natural

progress, while, on the contrary, repeated attempts have been made by Government to extend the cod-fishery in America. For its encouragement enormous pecuniary sacrifices have been made, but still with very little success; the fishery is not flourishing, and it is only the Government bounty that enables the adventurers to carry it on without loss. The number of vessels engaged in it, in 1836 and 1837, was 430, amounting to 53,000 tons burden; the crews consisted of 10,000 men. The ports from which they sailed were Bayonne, Binic, Bordeaux, Boulogne, Cette, Cherbourg, Dieppe, Dunkerque, Fecamp, Granville, Honfleur, La Rochelle, La Croisic, Le Havre, Le Legue, Marseille, Nantes, Portrieux, St. Malo, St. Servan, St. Valery-sur-Somme, and St. Valery-en-Caux. The whale-fishery was established in 1784, and is still carried on under the influence of the system of bounties, with almost as little success as the cod-fishery; for though it costs the state annually £40,000, yet only from 30 to 40 vessels are engaged in it, carrying less than 1,500 men. The whale-vessels sail chiefly from Le Havre, which sends out seven-ninths of the shipping employed; the others belong to Bordeaux, Dunkerque, Marseille, Nantes.

Commerce.—The productions of industry as well as those of the soil, give rise to an extensive inland and foreign commerce, both of which are advantageous to France; but the value and amount of the former it is very difficult to establish. The principal towns for commerce are — Paris, Lyon, Rouen, Saint Etienne, Beaucaire, Aix, Toulouse, Carcassonne, Nimes, Montpellier, Beziers, Lille, Strasbourg, Nancy, Mulhausen, Perpignan. Great part of the inland commerce is still transacted at fairs, which are held in all the great towns in the kingdom; and the cheapness of the land-carriage, which costs only from 2s. to 2s. 6d. per cwt. for an hundred miles, facilitates the transport of merchandise to the various marts. The periodical routine begins with the fair of Longchamps, which is held annually at Paris in spring, and is followed by a long list of provincial fairs, the principal of which are those of Beaucaire in the department of Gard, and of Guibray, a suburb of Falaise, in Calvados.

The nature and extent of the foreign commerce are better known. The principal articles of import are — horses, cattle, raw silk, wax, tallow, peltry, wool, leaf tobacco, dyewoods, oil, iron, tin, lead, copper, silver, gold, sulphur, hemp, cotton, indigo, sugar, coffee, cacao, and spiceries. The principal articles of export are — woollen and silk stuffs, wine, brandy, ribbons, lace, cloth, linen, canvas, cotton cloth, white and stained paper, books, plates, maps, furniture, articles of fashion, salt, iron and gilt wire, jewellery, clocks and watches, porcelain, glass, hats, fruits, millstones, perfumery, mercery, &c. Paris itself furnishes more than a fifth part of the exports; but the articles are too numerous to be specified. The principal ports for foreign trade are — Marseille, Le Havre, Bordeaux, Nantes, Rochelle, Dunkerque, Boulogne, Dieppe, St. Malo, L'Orient, Bayonne, and Cette. The average value of the exports, for nine years from 1825 to 1833, was £26,302,675 sterling; and of the imports, £24,932,829; but in subsequent years, till 1836, the value of both increased very considerably.

The general returns published by the Administration of Customs, of the trade of France with her colonies and with foreign countries during the year 1838, exhibit the following results. Compared with 1837, which was a disastrous year to foreign trade, the imports and exports recovered the activity of former years, and showed an excess of £13,080,000. The comparison, however, with 1836, shows a difference of only £1,040,000 in favour of 1838. The comparative extent of the general trade of France in these three years was as follows: —

Years.	*Imports.*	*Exports.*	*Total.*
1836, . .	906,000,000 . .	961,000,000 . .	£74,680,000
1837, .	808,000,000 .	758,000,000 .	62,640,000
1838, . .	937,000,000 . .	956,000,000 . .	75,720,000

The improvement was much more marked in the '*special*,' or exclusively French, than in the *general* trade of the country; the former exceeded by £4,920,000 the amount of 1836. In 1837 the exports of the productions of the soil and manufactures were less by £4,600,000 than in 1836; but in 1838 they recovered, and showed an excess of £1,200,000. The amount of the "Special trade" during these three years was, in 1836, £47,720,000; in 1837, £43,320,000; in 1838, £52,640,000 The increase in the exports during the last-mentioned year was chiefly on cotton and woollen goods; the first, which amounted to £2,640,000 in 1836, rose to £3,200,000 in 1838; the exports of woollen rose from £1,960,000 to £2,560,000. Silks, which constitute one-fifth of the French exports, after falling in amount to £3,600,000 in 1837, rose to £5,560,000 in 1838; and the export of wine in that year increased to £2,040,000, being the same as in 1836. The United States of N. America and England are the countries which participate most largely in the trade of France. In

1838, the former shared in the proportion of 16 per cent. in the general and special trade; and England in the proportion of 12 per cent. in the general, and 11 per cent. in the special trade. Generally speaking, the commerce of France resumed, in 1838, the activity it had acquired in 1836.

In 1837, the number of vessels employed in the coasting trade was 64,900, carrying 2,209,269 tons, and manned by 254,152 men; and the whole of their cargoes weighed 900,000 tons, or 17,821,091 metrical quintals. The trade of the different ports in metrical quintals was as follows:—Rouen, 2,005,500 (197,856 tons); Marseille, 1,734,820 (171,159 tons); Bordeaux, 1,446,610 (142,728 tons); Le Havre, 1,254,777 (123.797 tons); Nantes, 623,571 (61,522 tons); Toulon, 516,084 (50,917 tons); Dunkerque, 400,442 (39,508 tons); La Rochelle, 344,486 (33,987 tons); Caen, 338,290 (33,376 tons); Libourne, 304,200 (30,012 tons); Cette, 217,550 (21,464 tons); Arles, 215,728 (21,284 tons.) The trade of the Mediterranean ports amounts to one-fifth of the whole; and the entire coasting trade of France is twice as much as the foreign trade in French vessels, and three quarters of the amount of the whole foreign trade, both in French ships and in those belonging to other countries. On 1st January 1839, the mercantile shipping engaged in the foreign trade consisted of 15,326 vessels, of the total burden of 696,978 tons.

In France there is only one privileged bank, that of Paris. It was first chartered in 1803 for a period of fifteen years; but the period was subsequently prolonged to 1845. The capital consisted of 67,900 shares of £40 each, making a total of £2,716,000 sterling. It issues notes of only two kinds, namely, for 1000 francs (£40) and 500 francs (£20); but the number of these is unlimited. It is under the direction of a governor named by the king, with a salary of £4000, two deputy-governors, and eighteen directors. There is, besides, a separate council for the discount department, composed of twelve members, chosen from such of the shareholders as are merchants. The business consists in discounting bills of exchange, making advances on Government securities, or on the deposit of bullion, foreign coin, diamonds, shares in public companies, &c.

Internal Communication. — This is entrusted to the management of the Board of Roads, Bridges, and Mines, one of the most interesting public bodies in France, as well for its utility, as for the intelligence of those who are connected with it. It is this board that superintends the roads, bridges, causeways, canals, rivers, &c., and all establishments whose operations may affect the public safety, such as steam-engines, lighthouses, water-mills, &c. The corps of engineers of roads and bridges is composed of the most distinguished pupils of the Polytechnic School, who, before entering upon their public duties, must have attended for two years the Special School of Roads and Bridges established at Paris. The kingdom is divided into 12 inspections, entrusted to division inspectors; and under these are chief engineers, who reside in the principal towns of the departments comprised in the inspection.

Roads and Railways.—There are in France twenty-eight highroads *(routes royales)* which are well kept; 97 departmental roads, and a great variety of cross, or country roads. The royal roads extend altogether 8623 leagues; departmental roads, 8505 leagues; military roads, 350 leagues; and country roads *(chemins vicinaux)*, 9319 leagues; in all 26,792 leagues, or about 70,000 miles. Of railways, there are, as yet, only three which are open for conveyance; but many others have been projected. Among these we may mention the *Paris and Orleans Railway;* the *Paris and Pontoise Railway;* the *Paris and Strasbourg Railway;* the *Paris and Bordeaux Railway; Paris and Havre Railway; Paris and Calais Railway; Paris and Saint Germain Railway*, with a branch to *Versailles;* and *Paris and Brussels Railway.* The French Minister has introduced a bill to give public aid for the execution of certain railways, chiefly such as private companies have not offered, or have proved unable, to execute. The sum of £400,000 is to be put into the estimates for this purpose in 1840, and £880,000 in 1841. The railroads to receive assistance are those from Paris to Orleans, Strasbourg to Basel, Andrezieux to Roanne, Montpellier to Nimes, and Lille to the Belgian frontier. The following list contains the names of those already finished or in progress, viz.

	Length in Metres.	*Length in Yards.*
From St. Etienne to the Loire,	21,285	23,278
From St. Etienne to Lyons,	60,000	65,618
From Andrezieux to Roanne,	68,009	74,377
From Alais to Beaucaire, by Nimes,	70,000	76,554
From Epinac to the Burgundy Canal,	28,000	30,621
From St. Germain to Paris,	25,000	27,340
And from Paris to Versailles.		

Canals.—In France there are 86 canals, either finished or in progress, forming altogether a length of 3,786,894 metres,* or 2,350 English miles. The following are the principal:—

The *Canal du Midi (South Canal)*, called also the *Canal Royal*, or the *Canal of Languedoc*, commences at the Garonne, below Toulouse, passes that city, continues its course near Carcassonne, past Beziers, and near Agde enters the lagune of Thau, which communicates with the Mediterranean Sea by the port of Cette. This magnificent work was opened for the passage of vessels in 1681. Its total length is 227,547 metres; or, according to some authorities, 244,092 metres.

The *Canal du Centre*, or of *Charollais*, opened in 1791, connects the Loire and the Saone, extending from Chalons, by Chagny, Saint Leger, Blanzy, and Paray, to Digoin, a distance of 116,812 metres.

The *Canal du Rhone au Rhin (Rhone and Rhine Canal)* connects the Saone with the Rhine by the Doubs. It consists of four principal parts: the first forms the junction of the Saone with the Doubs, and ends at Dole; the second, or Doubs navigation, passes by Orchamps, Besançon, Baume les Dames, l'Isle, Dampierre, and Vougeaucourt, where it terminates; the third connects the Doubs with the Rhine, passing by Montbeliard, Dannemarie, Mulhausen, Neuf Brisack, and Graffenstadt, where it joins the Ille, an affluent of the Rhine, about 1000 metres above Strasbourg; the fourth part connects Mulhausen with Bale and Hninguen. The first part was finished in 1806; the second since 1820; and the fourth is nearly finished. The total length of the first three sections is 321,277 metres; or, according to other authorities, 302,160 metres.

The *Canal du Bourgogne* (Burgundy Canal) is intended to connect the Yonne with the Saone, and thereby to form a second communication with the two seas across the centre of France. It commences a little above the Roche-sur-Yonne, and ends at Saint Jean de Losne, on the Saone, passing by Saint Florentin, Tonnere, Montbard, Marigny, Pouilly, Dijon, and Longvic. The total length will be 241,469 metres. Near Pouilly there is a tunnel of 3000 metres, or little less than two miles long.

The *Canal of Saint Quentin* connects the Scheldt with the Oise, commencing at Cambray, passing Saint Quentin, and ending at Chauny on the Oise, with a tunnel near Saint Quentin. Its total length is 93,380 metres. The *Canal of Crozat*, which forms a part of it, has a length of 41,551 metres.

The *Somme Canal* extends along the valley of the Somme, from Saint Simon, on the canal of Saint Quentin, to Saint Valery, a distance of 158,039 metres.

The *Canal of Briare* connects the Loire with the Loing, an affluent of the Seine, commencing at Montargis on the Loing, and ending at Briaire on the Loire, a distance of 55,301 metres. It was opened in 1642. From Montargis another canal extends to Saint Mamers on the Seine, 52,934 metres, under the name of *Canal du Loing*.

The *Orleans Canal* commences at Combleaux on the Loire, and ends at Buges on the Canal du Loing. It was opened in 1692, and has a length of 72,304 metres.

The *Ille and Rance Canal*, begun in 1804, but not yet finished, was intended to connect these two rivers, with a total length of 80,796 metres.

The *Canal of Brittany* is intended to connect Brest with Nantes, passing by Blain, Redon, Maletroit, Josselin, Rohan, Pontivy, and Chateaulin. Its length will be 369,437 metres, or about 218 English miles, of which 70 are still unfinished.

The *Nivernais Canal* connects the Loire with the Yonne, in the department of Nievre and Yonne. Its length will be 174,505 metres.

The *Ourcq Canal* ends at Paris, and supplies the capital with water. Its length is 96,000 metres.

The *Loire Side Canal* extends through the departments of Allier, Nievre, and Cher. Its length will be 97,192 metres.

The *Berry Canal* extends through the departments of Cher, Loir and Cher, Indre and Loire. Its length will be 317,300 metres.

TABLE of the OLD PROVINCES of FRANCE, with the Corresponding Departments.

Provinces.	*Departments.*	*Capitals of Provinces.*
Alsace,	Haut Rhin; Bas Rhin,	Strasbourg.
Angoumois,	Charente,	Angoulême.
Anjou,	Maine et Loire,	Angers.
Artois,	Inland, or south-eastern, portion of Pas de Calais,	Arras.
Aunis,	Maritime portion of Charente Inferieure,	La Rochelle.
Auvergne,	Puy de Dome and Cantal,	Clermont.
Bearn,	Basses Pyrenees,	Pau.
Berry,	Cher, Indre, and part of Nievre,	Bourges.
Bourbonnais,	Allier,	Moulins.
Bourgogne,	Ain, Cote d'Or, Saone et Loire, Yonne,	Dijon.
Bretagne,	Cotes du Nord, Finistere, Ille et Vilaine, Loire Inferieure, Morbihan,	Rennes.
Champagne,	Ardennes, Aube, Marne, Haute Marne,	Troyes.
Comté de Foix,	Ariege, and the republic of Andorre,	Foix.
Dauphiné,	Hautes Alpes, Drome, Isere,	Grenoble.
Flandre,	Nord,	Lille.
Franche Comté,	Doubs, Jura, Haute Saone,	Besançon.
Gascogne, Guyenne,	Aveyron, Dordogne, Gers, Gironde, Lot, Lot et Garonne, Landes, Hautes Pyrenees, Tarn et Garonne,	Auch. Bordeaux.
Ile de France,	Oise, Seine, Seine et Oise, Seine et Marne, S. part of Aisne,	Paris.
Languedoc,	Ardeche, Aude, Gard, Herault, Haute Garonne, Haute Loire, Lozere, Tarn,	Toulouse.
Limousin,	Correze, Haute Vienne.	Limoges.
Lorraine,	Meurthe, Meuse, Moselle, Vosges,	Nancy.
Lyonnais,	Loire, Rhone,	Lyon.
Maine,	Mayenne, Sarthe,	Le Mans.
Marche,	Creuse,	Gueret.
Nivernais,	Nievre,	Nevers.
Normandie,	Calvados, Eure, Manche, Orne, Seine Inferieure, N. part of Eure et Loire,	Rouen.
Orleanais,	Eure et Loire, Loiret, Loir et Cher,	Orleans.
Picardie,	Somme, maritime part of Pas de Calais, N. part of Aisne,	Amiens.
Poitou,	Deux Sevres, Vendee, Vienne,	Poitiers.

* The metre is equal to 39.37100 English inches, or rather more than a yard.

Provence, . .	Basses Alpes, Bouches du Rhone, Var, E. part of Vaucluse,	Aix.
Roussillon, . .	Pyrenees Orientales, ...	Perpignan.
Saintonge, .	Eastern or Inland part of Charente Inferieure, . . .	Saintes.
Comtat d'Avignon,	Western part of Vaucluse, ...	Avignon.

GEOGRAPHICAL and STATISTICAL TABLE of the EIGHTY-SIX DEPARTMENTS of FRANCE.

NAMES OF DEPARTMENTS.	*Area in Square Geog. Miles.*	*Population in 1836.*	*No. of Arrond.*	*No. of Cantons.*	*No. of Communes.*	*No. of Deputies.*	*Capitals.*	*Distance from Paris.**
Ain,	1,700	346,188	5	35	443	5	Bourg,	230 SE.
Aisne,	2,179	527,095	5	37	839	7	Laon,	75 NE.
Allier,	1,689	309,270	4	26	323	4	Moulins,	166 S. by E.
Alpes (Basses),	2,122	159,045	5	30	257	2	Digne,	380 SSE.
Alpes (Hautes),	1,586	131,162	3	24	189	2	Gap,	350 SSE.
Ardeche,	1,595	353,752	3	31	329	4	Privas,	310 S. by E.
Ardennes,	1,474	306,861	5	31	478	4	Mezieres,	125 NE. by E.
Ariege,	1,635	260,536	3	20	336	3	Foix,	415 S.
Aube,	1,760	253,870	5	26	447	4	Troyes,	90 SE.
Aude,	1,837	281,088	4	31	433	5	Carcassonne.	394 S.
Aveyron,	2,566	370,951	5	42	230	5	Rhodez,	316 S.
Bouches du Rhone,	1,474	362,325	3	27	106	6	Marseille,	420 SSE.
Calvados,	1,622	501,775	6	37	804	7	Caen,	122 W. by N.
Cantal,	1,576	262,117	4	23	266	4	Aurillac,	270 S.
Charente,	1,711	365,126	5	29	453	5	Angouleme,	247 SSW.
Charente (Inf.),	1,769	449,649	6	40	480	7	Rochelle,	250 SW.
Cher,	2,075	276,853	3	29	297	4	Bourges,	120 S.
Correze,	1,674	302,433	3	29	291	4	Tulle,	254 S. by W.
Corsica	2,852	207,889	5	60	355	2	Ajaccio,	560 SE.
Cote d'Or,	2,551	385,624	4	36	727	5	Dijon,	165 SE.
Cotes du Nord,	2,164	605,563	5	48	375	6	St. Brieuc,	237 W.
Creuse,	1,548	276,234	4	25	276	4	Gueret,	190 S. by W.
Dordogne,	2,738	487,502	5	47	582	7	Perigueux,	270 S. by W.
Doubs,	1,592	276,274	4	27	640	5	Besançon,	217 SE. by E.
Drome,	1,911	305,499	4	28	359	4	Valence,	302 SSE.
Eure,	1,690	424,762	5	36	798	7	Evreux,	55 W. by N.
Eure et Loir,	1,753	285,058	4	24	442	4	Chartres,	46 SW.
Finistere,	2,017	546,955	5	43	281	6	Quimper,	305 W. by S.
Gard,	1,744	366,259	4	38	342	5	Nimes,	370 S. by E.
Garonne (Haut),	1,954	454,727	4	39	599	6	Toulouse,	370 S. by W.
Gers,	1,789	312,882	5	29	498	5	Auch,	374 S. by W.
Gironde,	2,981	555,809	6	48	543	9	Bordeaux,	312 SSW.
Herault,	1,815	357,846	4	35	329	6	Montpellier,	375 S. by E.
Ille et Vilaine,	1,849	547,249	6	43	349	7	Rennes,	190 W. by S.
Indre,	2,041	257,350	4	23	249	4	Chateauroux,	148 S. by W.
Indre et Loir,	1,871	304,271	3	24	285	4	Tours,	125 SW. by S.
Isere,	2,419	573,643	4	45	555	7	Grenoble,	305 SE. by S.
Jura	1,464	315,355	4	32	575	4	Lons le Saulnier,	215 SE.
Landes,	2,645	284,918	3	28	339	3	Mont de Marsan,	373 SSW.
Loir et Cher,	1,861	244,043	3	24	296	3	Blois,	100 SW. by S.
Loire,	1,344	412,497	3	28	318	5	Montbrison,	239 SSE.
Loire (Haute),	1,442	295,384	3	28	266	3	Le Puy,	276 S. by E.
Loire (Inf.),	1,773	470,768	5	45	206	7	Nantes,	215 WSW.
Loiret,	2,051	316,189	4	31	348	5	Orleans,	69 SSW.
Lot,	1,525	287,003	3	29	300	5	Cahors,	310 S. by W.
Lot et Garonne,	1,395	346,400	4	35	354	5	Agen,	336 S. by W.
Lozere,	1,482	141,733	3	27	188	3	Mende,	307 S. by E.
Maine et Loire,	2,094	477,270	5	34	384	7	Angers,	166 SW. by W.
Manche,	1,754	594,382	6	49	645	8	St. Lo,	158 W. by N.
Marne,	2,358	345,245	5	32	690	6	Chalons-sur Marne	95 E.
Marne (Haute),	1,812	255,969	3	28	550	4	Chaumont,	140 ESE.
Mayenne,	1,507	361,765	3	27	275	5	Laval,	150 WSW.
Meurthe,	1,621	424,366	5	29	714	6	Nancy,	180 E.
Meuse,	1,759	317,701	4	28	589	4	Bar-le-Duc,	130 E.
Morbihan,	2,073	449,743	4	37	228	6	Vannes,	250 WSW.
Moselle,	1,955	427,250	4	27	604	6	Metz,	176 E.
Nievre,	1,997	297,550	4	25	317	4	Nevers,	135 S. by E.
Nord,	1,632	1,026,417	7	60	660	12	Lille,	130 N. by E.
Oise,	1,716	398,641	4	35	683	5	Beauvais,	43 N. by W.
Orne,	1,632	443,688	4	36	534	7	Alençon,	107 W. by S.
Pas de Calais,	1,949	664,654	6	43	903	8	Arras,	102 N. by E.
Puy de Dome,	2,356	589,438	5	47	444	7	Clermont	220 S. by E.
Pyrenees (Bas),	2,223	446,398	5	40	630	5	Pau,	411 SSW.
Pyrenees (Hautes),	1,347	244,170	3	26	492	3	Tarbes,	409 S. by W.
Pyrenees (Orient.),	1,197	164,325	3	17	226	5	Perpignan,	430 S.
Rhin (Bas),	1,214	561,859	4	33	544	6	Strasbourg,	250 E.
Rhin (Haut),	1,120	447,019	3	29	489	5	Colmar,	240 E. by S.

* These distances are the lengths of straight lines in English miles drawn on the map. The travelling distance may be reckoned generally one-fifth more.

NAMES OF DEPARTMENTS.	*Area in Square Geog. Miles.*	*Population in 1836.*	*No. of Arron.*	*No. of Cantons.*	*No. of Communes.*	*No. of Deputies.*	*Capitals.*	*Distance from Paris.*
Rhone,.....	814	482,021	2	25	253	5	Lyon,.....	248 SSE.
Saone (Haut),.....	1,497	343,298	3	28	651	4	Vesoul,.....	196 ESE.
Saone et Loire,.....	2,493	538,507	5	48	592	7	Macon,.....	213 SE. by S.
Sarthe,.....	1,860	466,808	4	33	394	7	Le Mans, ...	119 SW. by W.
Seine,.....	138	1,106,891	3	8	81	14	PARIS.	
Seine (Inf.),.....	1,732	325,881	5	29	556	11	Rouen,.....	70 NW.
Seine et Marne,....	1,734	449,582	6	36	687	5	Melun,.....	28 SE.
Seine et Oise, ...	1,600	720,525	5	50	757	7	Versailles,.....	10 SW.
Sevres (Deux),.....	1,702	304,105	4	31	356	4	Niort,.....	223 SW. by S.
Somme,.....	1,758	552,706	5	41	835	7	Amiens,.....	73 N.
Tarn,.....	1,668	346,614	4	35	327	5	Alby, ...	343 S.
Tarn et Garonne,..	1,043	242,184	3	24	191	4	Montauban,.....	342 S. by W.
Var,.....	2,122	323,404	4	35	210	5	Draguignan, ...	423 SSE.
Vaucluse,.....	963	246,071	4	22	148	4	Avignon,.....	367 SSE.
Vendee,.....	1,964	341,312	3	30	294	5	Bourbon-Vendee,	243 SW.
Vienne,.....	2,010	288,002	5	31	300	5	Poitiers,.....	195 SW. by S.
Vienne (Haute),....	1,666	293,011	4	27	198	5	Limoges,.....	220 S. by W.
Vosges,.....	1,451	411,034	5	30	547	5	Epinal,.....	195 E. by S.
Yonne,.....	2,095	355,237	5	37	481	5	Auxerre,.....	92 SE.
	153,929	33,540,908	363	2845	38,623	449		

§ CITIES AND TOWNS.

PARIS, the capital of the kingdom, is situate on a plain, on both banks of the Seine, in north lat. 48° 50′, and east longitude from Greenwich 2° 20; 220 miles south-east of London, and 97 miles from the sea. It extends along the river about 4½ miles, and covers an area of 34,000,762 square metres, or 40,666,253 square yards, its greatest breadth being three miles and a half. The population, in 1836, amounted to 909,000, exclusive of military and strangers.

The construction of Paris is in general irregular and inelegant. The houses are lofty, and the streets narrow, with the exception of a few, as the Rues de la Paix, Castiglione, Rivoli, Royale, &c., that are truly magnificent. The elegance and taste displayed in the arrangement of the shops, the splendour and richness of the *passages* Vivienne, Colbert, Vero-Dodat, Choiseul, de l'Opera, des Panoramas, Saumon, galleries sparkling with bronzes and gilding, strongly excite the curiosity of strangers. The interior northern Boulevards (bulwarks, the site of the old fortifications and walls of Paris), pass through the finest portions of the city, from the Canal of St. Martin to the Madeleine, forming a long semi-elliptic walk, planted with trees, and lined with houses of various architecture, some of which are private residences, and others are shops, hotels, and theatres. From the Boulevards other streets open, which are crowded with a prodigious concourse of people, and give to the scene the appearance of a perpetual fair. The two triumphal arches of St. Denis and St. Martin add to the fineness of the sight. It is only, however, a few years since foot-pavements were first introduced; and the streets in the more ancient parts of the city are still without any accommodation of this sort for the foot passengers.

The principal public *Places* which adorn Paris are: — The *Place Vendome*, in the centre of which there is a triumphal column, surmounted by a statue of Napoleon. The surface is of bronze, made of cannon taken from the Austrians and Russians in 1805, and covered with figures emblematic of his victories. The *Place des Victoires*, with an equestrian statue of Louis XIV., in bronze. The *Place Royale*, surrounded with massive arcades, and containing a statue of Louis XIII. The *Place du Chatelet*. The *Place du Carrousel*, inclosed by the Tuileries and the Louvre, and containing a triumphal arch, surmounted by a statue of Victory driving a quadriga. The *Place Louis XV.*, now called the *Place de la Concorde*, is the point from which the view embraces the vast walk of the *Champs Elysees*, the colossal arch *de l'Etoile*, the *Palais Bourbon*, the *Garde Meuble*, and the *Tuileries*. In the centre of it stands the obelisk of Luxor, an immense block of stone, lately brought from Egypt, with great labour and expense. The *Place de la Bastille* is the site of the State prison which was demolished by the revolutionary mob in 1789. It was Bonaparte's intention to raise a colossal elephant of bronze in the centre; but the present government have substituted a fine bronze pillar to the memory of the citizens who were killed during the three days of July 1830. The *Place de la Bourse* contains a superb edifice (the Exchange), from which it takes its name.

The principal public buildings are: — The Royal Palace of the *Tuileries*, an extensive pile of heavy architecture, with a fine public garden, the most frequented walk in Paris, which extends half a mile along the Seine. The *Louvre* is a square pile of building, surrounding an open court, of an elegant style of architecture, joined to the Tuileries by a long gallery, extending about 1,200 feet parallel with the river, and containing a rich collection of pictures. The *Palais Royal*, the residence of the Dukes of Orleans, consists of four galleries, enclosing a long open court, and containing a great number of shops and coffeehouses, which form, as it were, the head-quarters of all the vice and luxury of Paris. The *Palais Bourbon*, now occupied by the Chamber of Deputies; and the *Luxembourg*, now occupied by the Chamber of Peers, are both on the south side of the river. To the latter is attached a large public garden, and a gallery of pictures by living artists. The *Hotel Royal des Invalides* is a vast pile, consisting of several courts surrounded by buildings, which form the residence of several thousand veteran soldiers. A fine esplanade extends between it and the river, and its church is remarkable for the elegance of its architecture, the richness of its ornaments, and the magnificent gilded dome which overtops it, and is considered to be the highest in Paris. The *Hotel de Ville* (town-house) a semi-gothic building, and now the official residence of the Prefect of the Seine, stands on the east side of the *Place de Greve*, so memorable in the annals of the revolution. The *Bourse (Exchange)*, a magnificent building, the finest of the kind in Europe, recently built after the model of the Parthenon of Athens, and adorned within by fresco paintings and carvings of exquisite workmanship. The *Palais du Justice*, a large building, occupies the site of the palace of the ancient Roman prefects of Gaul, of the Kings of the first race, and of the Counts of Paris. The *Elysee Bourbon*, a superb pleasure-house, inhabited successively by the Marchioness de Pompadour, the Duchess of Bourbon, Joachim Murat, Napoleon, the Emperor Alexander of Russia, the Duke and Duchess of Berry, and the Infant Don Miguel of Portugal. The *Ecole Militaire (Military School)* is a fine building of large dimensions. In front of it is the *Champ de Mars*, a large parallelogram, 3000 feet long by 1200 wide, which extends to the bank of the river, and is used for military reviews and exercises, horse-races, and other public amusements.

The most important churches which the French capital contains are: — The metropolitan cathedral of *Notre Dame* (our Lady), a large and magnificent gothic building, with two square towers, situate upon an island in the Seine (the original Paris, and still called the *City*.) The *Pantheon*, originally intended for the temple of Sainte Genevieve, the patroness of Paris; but now destined to be the receptacle of the remains of such great men as have deserved well of their country. In its external appearance it very much resembles St. Paul's in London, of which it was intended to be the rival, and, like it, is built in the form of a cross, with the intersection of the arms surmounted by a massy dome. The *Madeleine*, or Church of St. Mary Magdalene, a superb edifice, in the form of a Greek peripteral temple, adorned with sculptures, and recently finished at a lavish expense, after many years labour. The church of *St. Germain-des-Pres (of the Meadows)*, is considered to be the oldest in Paris.

The public charitable establishments and benevolent institutions are numerous and well managed. There are 12 civil hospitals, 5 military hospitals, and 13 *hospices* (asylums, or houses of refuge.) The principal of these establishments are: — The *Hotel Dieu* (God's House) a very large infirmary, occupying both sides of the river, beside the church of Notre Dame; the *Salpetriere*, &c. At the head of the military hospitals is the *Hotel des Invalides*, already mentioned; and next to it is that of the *Val de Grace*.

There are twenty-two bridges across the Seine. The principal of them are the bridges of *Jena*, *Austerlitz*, *Louis XVI.*, the *Pont Neuf*, the centre of which rests upon the point of the island *du Palais*, and is surmounted by an equestrian statue of Henri IV.; the *Pont-royal*, the *Pont des Arts*, made of iron, and remarkable for its elegance, but used only for foot passengers; the *Pont du Carrousel*, consisting of three arches of cast-iron supported by stone piers, &c. The banks of the Seine are lined with spacious quays, throughout its whole course within the city; and trees have been lately planted along some parts of them.

Paris contains more than 500 sluices for cleaning the streets, and 115 public wells. The water for these is derived chiefly from the Seine, but partly also from the Canal de l'Ourcq. There is no such thing in Paris as the system of underground water-pipes which convey so abundant a supply of water to the private houses in London.

Of the literary and scientific establishments the principal are: — The *Universitaire Academie* of Paris, or "the Universitie," attended by 7446 students; the *Royal*

College of France, a kind of university, where the most distinguished professors deliver lectures on the exact and natural sciences, medicine, law, philosophy, literature, history, ancient and oriental languages, which are attended by a great number of students. The *Royal Museum of Natural History (Jardin du Roi; Jardin des Plantes)*, where 13 eminent professors lecture upon every branch of natural science to nearly 3000 students. The *Polytechnic School*, an institution of eminent utility, which has formed the model of similar establishments in other countries. The *Preparatory School* for forming professors. The *Royal Conservatory of Arts and Trades*, attended by about 1000 pupils. The *Royal Observatory*, one of the finest, most magnificent, and most celebrated establishments of the kind. The *Institut Royal de France*, divided into the Academie Française, Academie des Sciences, Academie des Inscriptions et Belles Lettres; Academie des Beaux Arts; the Academie des Sciences Morales et Politiques; and many others which are too numerous to be mentioned.

Paris contains about 38 public libraries: of these the *Bibliotheque du Roi* is the richest and largest in the world. This vast conservatory contains no less than 900,000 books and printed pamphlets, 80,000 manuscripts, 1,600,000 engravings, 300,000 maps and plans, and a most valuable collection of medals and antiquities. Of the others, those of the *Arsenal*, the *Pantheon*, and the *Institute*, are the largest and the most important. With respect to the printing and publishing of books, London alone can compete with Paris. Besides 300 periodical journals, the publishers of Paris gave to the world, in 1832, 5760 works; and the 80 printing houses, the number fixed by law, employed 1200 hand-presses, and 80 printing machines, several of which were moved by steam. The *Imprimerie Royale*, founded in 1531 by Francis I., is the principal establishment of the kind in existence. Its fonts of types weigh not less than 368 tons, and could compose 125,000 pages. Of late years this establishment has kept 300 presses at work, 60 of them moving night and day.

The cemeteries, or burial grounds, are all without the city. They are five in number, and form large enclosures, laid out in a picturesque style, with monuments often in good taste, and containing interesting inscriptions. The cemetery of *Pere la Chaise*, in particular, is one of the most beautiful as well as most interesting sights in Paris. It is situated on the slope of a hill on the east side of the city, surrounded by luxuriant valleys and rising grounds, and commands an extensive view of a beautiful landscape. The fineness of the situation has occasioned its being chosen as a favourite place of interment, and no other cemetery can vie with it in the number and beauty of its monuments. Formerly the burial places were all within the city; but in consequence of becoming extremely crowded, and giving rise to pestilential diseases, they were all cleared out, and the bones, carefully collected and cleaned, have been deposited in subterraneous galleries, excavated in the course of ages for the stones used in building the city. To these depositories the name of Catacombs has been given, in imitation of those of Rome and other places. It is supposed that the catacombs contain the remains of at least 3,000,000 of human beings.

The chief officer of the municipality of Paris is the Prefect of the Department of the Seine, within which the city is situate. The city itself contains 12 of the 14 arrondissements that compose the department, and is surrounded by a wall of about 17 miles in circumference, which serves as a very complete check upon the introduction or escape of criminals, suspected persons, and illicit goods; all which matters are under the charge of the Prefect of Police. The police of Paris has been brought to a state of great perfection; and by means of the numerous agents who are employed, the officers obtain the most minute information respecting the character and pursuits of every suspected person. The prisons, also under this prefect's jurisdiction, are now eight in number, and the persons confined are divided into the following classes: — 1. Those under accusation; 2. Debtors; 3. Political offenders; 4. Those condemned to one year's imprisonment; 5. Persons under trial; 6. Persons condemned to hard labour; 7. Juvenile criminals; 8. Women. For purposes of police the city is divided into 48 districts.

The staple manufactures of Paris consist chiefly of articles of taste, and all kinds of fancy works; such as jewellery, watches, artificial flowers, toys, and the like. Of the manufacturing establishments, two belong to Government; namely those for tapestry and carpets, and for snuff. In the first, called the *Gobelins*, from a dyer by whom it was instituted about the middle of the 16th century, is manufactured that beautiful tapestry, the reputation of which has spread over Europe.

As every thing which enters Paris must be introduced by the barriers or gates (of which there are 56 in the circuit of the walls), where duties are levied upon all kinds of goods, the quantities of the different articles of consumption used by the popula-

tion every year, are ascertained with extraordinary exactness. The following table shews the consumption in Paris in 1836. —

Wine,	80,524 tuns.	Pies, &c.	207 tons.
Brandy,	3,181 ,,	Coarse meat,	807 ,,
Cider and Perry,	1,583 ,,	Sausages, hams, &c.	3,250 ,,
Vinegar,	1,531 ,,	Offal,	1,214 ,,
Beer,	9,761 ,,	Dry cheese,	1,225 ,,
Grapes,	609 tons.	Sea fish,	£190,855
Oxen,	72,330 head.	Oysters,	£48,786
Cows,	17,442 ,,	Fresh-water fish,	£21,669
Calves,	77,583 ,,	Poultry and game,	£335,491
Sheep,	378,476 ,,	Butter,	£461,283
Swine,	91,929 ,,	Eggs,	£197,034

Of grain and flour the ordinary daily consumption is estimated at 1,580 sacks, each weighing 139 kilogrammes.* The price of the loaf of household bread of four pounds weight, varies from 11 to 12 sous. The annual consumption of potatoes is nearly 125,000 kilogrammes, or about 650,000 lbs. More than 20 cart-loads of water-cresses are brought into Paris daily, each of which produces £12, thus giving a daily consumption of £240 for this article alone.

The municipal revenues of Paris amount to about 45,000,000 francs, or upwards of £2,000,000 sterling; and the total amount of taxes paid by the inhabitants is estimated at 135,345,000 francs, or upwards of £5,000,000 sterling. The establishments of public utility are in general of great beauty and perfect construction; as, for example, the Markets of Saint Germain, Saint Honoré, and La Vallée; the Wine-Storehouse; the Market *Des Innocens*, the principal market for the sale of fruits and garden stuffs; the Corn-Hall, a large round building, surmounted by a vast dome; and the *Abbatoirs*, spacious buildings without the city, for the slaughtering of cattle.

There is no city in Europe which contains a greater number of theatres, and other places of amusement. There are within the barriers sixteen principal theatres; and both within and without, the places of amusement are innumerable. Paris likewise possesses several superb public walks; as the Garden of the Tuileries, already mentioned; the *Champs Elysées*, an immense park planted with trees, and having at its termination the triumphal arch *De l'Etoile*, a very large and superb structure, erected to commemorate the triumphs of the French armies; the Garden of the Luxembourg; the *Jardin des Plantes*, or Botanic Garden, remarkable for its varied and picturesque beauty, and its fine scientific collections; and the Garden of the Palais Royal.

The origin of Paris is unknown. The first mention we find of it is in the Commentaries of Cæsar, in whose time it was the chief city of the Gallic tribe of Parisii, and occupied only the small island in the Seine, still called the *Cité* or *Isle du Palais*. In the year 486, Paris passed into the hands of the Franes, and continued to be the capital of the Merovingian dynasty of their kings. Under the second dynasty it became the property of one of the great barons, with the title of Count of Paris.† Towards the close of the ninth century it was erected into a new fief, called the Duchy of France. In the year 987, Hugues Capet, who was then Duke, was elected King; and the city has been ever since the capital of the kingdom. The city, confined originally to the island, gradually extended to the opposite banks; and in the sixteenth century already occupied all the space within the *Boulevards*, which mark the site of its fortifications. Beyond these, long suburbs extended on all sides; and in the reign of Louis XVI. a wall was built, which included them also. In 1841, the Government resolved to surround the city with fortifications; and these, consisting of an "enceinte continué," and several detached forts, are now in progress.

The French are fond of comparing Paris with London, as the only rival worthy of its fame and greatness; but in many respects there is the most perfect contrast between them. The houses in London are generally low; but one would suppose, from the height of the houses, and the narrowness of the streets, that the value of ground for building was enormous in France, and especially in and near Paris. The roads leading out of London are lined with houses and villages extending almost continuously for several miles into the country; but, for five or six miles round Paris, till close to the barriers, there is scarcely a house to be seen. "You are as much in the country when you pass the barrier of St. Denis, as if you were 100 miles from Paris," says a recent traveller.

* A kilogramme is equal to 2 lbs. 3 oz. 3 dwts. 2 grs. troy.

† This title has been lately revived in the person of the young Prince of Orleans, grandson of King Louis Philippe.

Paris now communicates with Versailles and St. Germain by a railway, and small steam-boats ascend the Seine to the latter town, which may therefore be now considered the river-port of Paris. At *La Villette*, on the north side of the city, there has been lately excavated, at the expense of a million sterling, a large basin, intended, when the necessary canals shall be completed, for the deposit of merchandise to be brought from Le Havre and Rouen on the one side, and from Flanders and Champagne on the other.

*Ain.**—Bourg-en-Bresse, 8996; †*Belley*, 4286; *Gex*, 2834; *Nantua*, 3701; *Trevoux*, 2556; Cerdon, 1745; Lagnieu, 2285; Montluel, 2927; Oyonnax, 1974; Pont de Vaux, 3189; Thoissy, 1545; Meillonas; St. Rambert; Fort de l'Ecluse; Ferney, or Fernex; Dortan; Seyssel; Villebois.

Bourg is a neat and industrious town, with a college, and several other scientific institutions. It has also a fine church of Notre Dame de Brou, built by Margaret of Austria, and noted for its gothic architecture, magnificent glass windows, and marble tombs. *Belley* and *Seyssel* are famous for the asphalte produced in their neighbourhood, an article expected to be of great importance in several of the useful arts. *Ferney* is celebrated for a chateau, long the residence of Voltaire.

Aisne.—Laon, 8400; *Chateau-Thierry*, 4697; *Saint Quentin*, 17,686; †*Soissons*, 8149; *Vereins*, 2555; Chauny, 4290; Frenoy le Grand, 3379; Guise, 3072; Bohain, 3024; La Fere, 2792; Hirson, 2718; Ribemont, 2726; Villers Cotterets, 2688; Saint Gobain, 2338; Fere en Tardenois, 2313; Creey sur Serre, 2085; Mennevret, 1901; Saint Erme, 1876; Seboncourt, 1812; Montbrehain, 1795; Sineeny-Autreville, 1774; Origny Ste Benoite, 1755; La Ferte Milon, 1716; Frieres-Faillouel, 1648; Premont, 1632; Brancourt, 1588; Lesquelles-Saint-Germain, 1551; Dizy-le-Gros, 1544; Montcornet, 1535; Vendeuil, 1519; Etreux, 1503; Premontré, 400; Folembray.

Laon is a small fortified town upon a hill, with a large cathedral. At *La Fere*, a fortified town on the Oise, is the oldest artillery school in France. *St. Gobain* and *Folembray* are famous for their glass works, and the former in particular for plate glass. *Premontré* is noted for an ancient abbey, and also for glass-works. *Saint Quentin* is a large and flourishing manufacturing town on the Somme. *Soissons* is a small fortified town, of more historical celebrity than present importance; it has a large cathedral.

Allier.—†Moulins, 14,672; *Gannat*, 5246; *La Palisse*, 2268; *Mont Luçon*, 4991; Cusset, 4910; Saint Pourçain, 4376; Arfeuilles, 3370; Ferrieres, 3107; Charroux, 1739; Bourbon-Archambault; Lercy-Levy; Tronget; Vichy; Neris; Commentry.

Moulins was formerly the capital of the Bourbonnais, but it is a place of no importance; though it contains manufactories of cutlery, tanneries, &c. It is situate on the right bank of the Allier, 166 miles S. by E. of Paris. *Bourbon-Archambault*, a small town near Moulins, is famous for its warm springs, which are much frequented in summer. *Commentry* is a large village, noted for its forge, coal mines, and glass-works, which employ 800 people. *Saint Pourçain* is noted for its cattle fair. *Vichy* and *Neris* are both famous for their baths; and the latter for the remains of a Roman camp and an amphitheatre.

Alpes Basses.—†Digne, 3932; *Barcelonette*, 2144; *Castellanne*, 1930; *Forcalquier*, 3036; *Sisteron*, 4429; Manosque, 5543; Riez, 3115; Valensolle, 3521; Colmars; Greoux; Entrevaux, Cereste; Peyrais.

Alpes Hautes.—†Gap, 7215; *Briançon*, 2835; *Embrun*, 3062; Vallouise; Monestiers; La Salle; Mont Dauphin; Remollon; Chateauroux.

Briançon is considered to be one of the strongest fortresses in the world: and the *Fort de l'Infernel*, comprised in the line of its fortifications, and situate about 7859 feet (1229 toises) above the level of the sea, is not only the highest fortress in Europe, but the highest place, constantly inhabited, next to the Hospice of the Great St. Bernard. Near *Embrun* is a rocking stone, considered one of the wonders of Dauphiné; and near the village of *Chateauroux* are quarries of slate; and, although 3000 feet above the level of the sea, the town is surrounded with meadows, orchards, groves, and natural kiosks.

Ardeche.—Privas, 4342; *Largentiere*, 2919; *Tournon*, 3571; Annonay, 8277; Aubenas; 4759; Le Bourg St. Andeol, 4268; Burzet, 3516; Desaignes, 3598; Gluiras, 3011; Joyeuse, 1850; Lavoute, 1920; Serrieres, 1987; Les Vans, 2169; Vernoux, 3006; Villeneuve-de-Berg, 2549; †Viviers, 2536; Rochemaure; Vals; Saint Etienne de Lugdares; Vallon; Saint Laurent les Bains; Saint Peray; Ruons.

Annonay, the largest town in the department, is situate at the confluence of the Canee and the Deaume, and has a considerable commerce, being the centre of a great manufacture of excellent paper. At *Bourg St. Andeol*, a small town on the right bank of the Rhone, are the remains of a Gaulish temple, which seems to have been dedicated to Mithra. *Rochemaure*, also on the Rhone, has a manufactory of gun-flints; and in its neighbourhood is the extinct volcano of *Chenivari*, one side of which presents a basaltic colonnade, 600 feet in length; and the *Balmes de Mont Brul*, an enormous funnel, 480 feet deep, and 30 in diameter at the brink. There are, besides, many other interesting geological curiosities in the department.

Ardennes.—Mezieres, 3759; *Rethel*, 6585; *Rocroy*, 3623; *Sedan*, 13,661; *Vouziers*, 2003; Charlevil'e, 7773; Chateau Porcien, 2267; Fumay, 2421; Gespunsart, 1618; Givet, 4220; Mouzon, 2320; Revin, 2123; Signy l'Abbaye, 2547; Attigny.

Sedan, the principal town of the department, is a fortified town on the right bank of the Meuse; noted for its cloth, which is manufactured to the value of £640,000 a-year.

Ariege.—Foix, 4857; †*Pamiers*, 6048; *Saint Girons*, 4381; La Bastide de Seron, 2911; Ereé, 2256; Massat, 9322; Mazeres, 3170; Mirepoix, 3633; Saurat, 5014; Saverdun, 3327; Seix, 3822; Tarascon, 2000; Ax; Puy de Till, a noted mountain.

Foix, upon the Ariege, 50 miles above Toulouse, the ancient residence of the Counts of Foix, is a small town, in the midst of marble quarries, iron mines, forges, and other works of various kinds.

Aube.—†Troyes, 29,143; *Arcis sur Aube*, 2673; *Bar sur Aube*, 3890; *Bar sur Seine*, 2269; *Nogent-sur-Seine*, 3277; Aix-en-Othe, 1734; Brienne-le-Chateau, 1930; Chaource, 1534; Essoyes, 1719; Estissae, 1537; Saint Mards, 1595; St. Martin-es-Vignes, 2148; Mussy-sur-Seine, 1730; Piney, 1564; Les Riceys, 3561; Romilly-sur-Seine, 3117; Vandœuvre, 1669; Villenaux, 2430; Clairvaux.

Troyes, formerly the capital of Champagne, is an irregularly built town on the Seine, 90 miles E.S.E. of Paris; but its fine cathedral, numerous manufactories, and extensive trade, render it a place of considerable importance. *Clairvaux* is noted for an ancient abbey, of which St. Bernard was abbot, and

* In these tables, the capitals of the departments are printed in small capitals; the capitals of arrondissements in italics. Bishoprics are marked by a cross †, and archbishoprics by two crosses ††. The figures express the amount of population, according to the census of 1836.

for a vat called St. Bernard's, capable of containing 800 tuns. Near *Nogent-sur-Seine* are the ruins of the *Paraclete*, a celebrated monastery founded by Abelard.

Aude.—†CARCASSONE, 17,394; *Castelnaudary*, 9883; *Limoux*, 6518: *Narbonne*, 10,246; Cannes, 2245; Chalabre, 3435; Coursan, 1761; Grnissan, 2329; Lezignan, 1792; Merinville, 1562; Montreal, 3383; Saissac, 1814; Sijean, 3296; Alet; Gincla; Montfort; Sainte-Colombe-sur-l'Hers; La Nouvelle; Leucate.

Carcassone, upon the Aude and the Canal du Midi, has a considerable trade in small wares and brandy, but is best known for its cloth manufactures. *Narbonne* is a trading town on the Canal de la Robine, which connects it with the Canal du Midi and the Mediterranean sea. It has considerable manufactories of verdigris, vinegar, and brandy; but its situation is very unwholesome, owing to the deleterious effluvia from the marshes by which it is surrounded. It is a very ancient city, having been founded by the first Roman colony sent into Gaul. In the middle ages, it was for 45 years the residence of several Saracen kings, had 40,000 inhabitants, made commercial treaties with Alexandria and Constantinople, and was noted for the salubrity of its climate. *La Nouvelle*, a small maritime town, at the terminus of the Canal de la Robine, is the port of Narbonne. *Leucate*, a small town on the Mediterranean, with a fine roadstead, and noted for two sieges, in the sixteenth and seventeenth centuries. *Sijean* is celebrated for its stank, and rich saltpits. *Castelnaudary* and *Limoux* are flourishing trading and manufacturing towns.

Aveyron.—†RHODEZ, 8249; *Espalion*, 3545; *Milhau*, 9806; *Saint Affrique*, 6336 *Ville Franche*, 9540; Aubin, 3392; Broquies, 3676; Castelnau, 3500; Saint Chely, 3289; Saint Genies, 3838; Nant 3203; Pomayrols, 3586; Requista, 3547; Saint-Romc-de-Tarn, 3154; Villeneuve, 3372; La Guiolle, 2000; Roquefort; Firmy, 1000; Cransac, 500.

Rhodez is a small episcopal city, with a cathedral reckoned one of the finest gothic buildings in France. *Saint Affrique* on the Sorque, an old ill-built town, with manufactories of coarse cloth, coverlets, cotton yarn, hosiery, tanneries, &c. and a considerable trade in wool, cheese, &c. Near it is the village of *Roquefort*, well known for its cheese, of which 36,000 tons are made annually from the milk of about 100,000 sheep, which are pastured in the plateau of *Larjac*, 820 yards above the level of the sea. *Cransac* is noted for its establishment of ferruginous acidulated waters, of which a great quantity is exported. *La Guiolle* is a small town on a basaltic hill, the entrepot of the cheese called Guiolle; and also the place of a great cattle market.

Bouches du Rhone.—†MARSEILLE, 145,115; †† *Aix*, 22,575; *Arles*, 20,236; Allauch, 3711; Aubagne, 6349; Auriol, 5320; Barbentanne, 2800; Saint Chamas, 2632; Chateau-Renard, 4152; La Ciotat, 5427; Cuges, 1855; Eguilles, 2280; Eyguires, 2987; Eyragues, 2227; Fontvieille, 2056; Fuveau, 2004; Gardanne, 3234; Istres, 3023; Lambesc, 3898; Lançon, 2060; Martgues, 7379; Orgon, 2584; Pelissanne, 2500; Saint Remy, 5464; Roqueraire, 3218; Salon, 5987; Tarascon, 10,967; Trets, 3014.

Marseille, is situate upon the Mediterranean Sea, 420 miles S.S.E. of Paris; and is one of the largest, most ancient, and most flourishing cities of France. It was founded by a colony of Phocæans from Ionia in Asia-Minor, about the year 539 B.C. and has undergone many changes. The old town is mean and dirty; but some of the newer parts are very fine, and worthy of notice, particularly the quarter next the sea, where there is a magnificent quay, crowded with the sailors of all nations. The streets in this part of the city are straight and wide, with foot-pavements, and particularly that of the Cannebiere, which is lined with fine houses, and contains rich warehouses. Marseille is situate on the east side of a large open bay, in the middle of which are three considerable islands, about a league from the town; between two of these islands, *Ratonneau* and *Pomegue*, a new harbour where ships of the line can anchor, has been lately formed by means of a dike which unites them. The third island contains an ancient state prison, the *chateau d'If*. The trade of the city is very great, and is constantly increasing; the customs exceed 30 millions of francs (about £1,250,000 sterling) a-year, and the municipal revenues yield about a tenth-part of that sum. *Aix (Aquæ Sextiæ)*, an ancient Roman city, 16 miles N. of Marseille, was so called from its thermal springs, which are still frequented, and the name of its founder C. Sextius Calvinus, who built or restored it, about 123 years B.C. It is situate in a fertile plain surrounded with hills, formerly covered with olive trees, and crossed by the river Arc, which flows through the middle of the town, and falls into the *Etang de Berre*, 3 leagues distant. Several interesting buildings still adorn this ancient city, which was long the capital of Provence, and the residence of its counts and parliament, and the celebrated resort of the troubadours. About a league to the east of Aix is the picturesque hill of *Sainte Victoire*, about 3400 feet high, which derives its name from the famous victory gained over the Cimbri and Teutones by the Roman consul Marius, 102 B.C. *Arles*, situate at the point of separation of the two branches of the Rhone, is irregularly built and thinly inhabited, but possesses some trade. It is chiefly important for its historical fame, and contains some remains of ancient magnificence; particularly a monolith obelisk of granite 47 feet high, a large amphitheatre, the ruins of two temples, and of a triumphal arch; the tower of Roland, &c.

Calvados.—CAEN, 39,140; †*Bayeux*, 10,303; *Falaise*, 9581; *Lisieux*, 10,257; *Pont l'Eveque*, 2118; *Vire*, 8013; Conde-sur-Noireau, 5562; Honfleur, 8888; Langrune, 2275; Luc, 1969; Orbec, 3209; St. Pierre sur Dives, 1711; Tallevende-le-Grand, 3294; Vassy, 3243; Isigny, 2000.

Caen, the chief town of lower Normandy, is situate at the confluence of the Orne and the Odon, with a harbour and noted shipbuilding yard. It is an episcopal city, and the seat of a royal court, and contains a number of scientific and literary establishments. In the church of *Saint Etienne* is the tomb of William Duke of Normandy, the Conqueror of England. *Bayeux*, a small episcopal and commercial town, is celebrated for its porcelain manufacture; and for its fine gothic cathedral. *Isigny*, a small seaport at the mouth of the Vire, from which there is exported an immense quantity of butter. *Falaise*, a small town, noted for dyeworks and hosiery, which give employment to 4000 people. In its suburb of *Guibray*, is held an annual fair reckoned one of the richest and best frequented in France; here is also the castle where William the Conqueror was born. *Lisieux*, a small town with a college, the centre of a great manufacture of flannels, and other kinds of woollen cloth. *Pont l'Eveque*, on the Touques, a small town. *Honfleur*, on the left bank of the Seine, a considerable seaport town, engaged in the cod and whale fishery, and in the colonial trade. *Vire*, a small town, formerly the capital of a pretty country called the *Bocage*, whose inhabitants have preserved their patriarchal habits. *Conde-sur-Noireau*, a small manufacturing town.

Cantal.—AURILLAC, 9766; *Mauriac*, 3530; *Murat*, 2941; †*Saint Flour*, 6464; Saint Cernin, 3180; Condat, 3270; Maurs, 2892; Pleaux, 3123.

At *Chaudes Aigues*, in this department, are celebrated warm springs which attract great numbers of visitors. The water distributed in pipes through the town, serves not only every useful purpose of warm water, but is also employed to heat the houses in winter.

Charente.—†ANGOULEME, 15,186: *Barbezieux*, 2756; *Cognac*, 3409; *Confolens*, 2687; *Ruffec*, 3004; Champniers, 4554; Jarnac, 2282; Manles, 1785; Montbron, 3172; La Rochefoucald, 2706: La Ruelle, 1000.

Angouleme is situate on the top of a hill, which overlooks a wide extent of country, with the Charente flowing at its foot, and is celebrated for paperworks, potteries, distilleries, manufactures of woollen tissue, and other articles. It has a fine harbour upon the Charente, a bridge and a cathedral.

Cognac, on the Charente, is the centre of an immense manufacture of very famous brandy, of which so much as £1,040,000 worth have been exported in a year, more than two-thirds of it for England. *Jarnac*, where a victory was gained by the Duke of Anjou, afterwards King Henry III. over the Calvinists, under the command of the Prince of Condé, in 1569. *Rochefoucault*, celebrated for its castle, gave its name to the author of the "Maxims." *Rancogne* is a small town on the Tardouere, remarkable for extensive caverns lined with stalactites.

Charente Inferiure.—† LA ROCHELLE, 14,632: *Ionzac*, 2618; *Marennes*, 4605; *Rochefort*, 14,040; *Saintes*, 10,437; *Saint Jean d' Angely*, 6031; Ars, 3875; La Flotte, 2557; Saint George, 4500; Marans, 4041; Saint Martin, 2581; Saint Pierre, 4630; Pons, 3726; Royan, 2589; Saint Savinien, 3559; Tonnay-Charente, 3206; La Tremblade, 2504.

La Rochelle is a strong town, with a safe and commodious harbour on Basque road. Its extensive basins, its fortifications, town-house, exchange, and castle square (Place du Chateau) are the most remarkable structures. Its maritime commerce is still extensive and active; and several years ago, very elegant baths were erected. It is memorable in the history of France for the siege which the Huguenots, whose stronghold it was, maintained against Louis XIII. and Cardinal Richelieu, in the year 1627-8. *Rochefort*, on the right bank of the Charente, 20 miles from Rochelle, a fine town and regularly built, is one of the great military ports of France, and the capital of one of the maritime prefectures. Its harbour for merchant ships admits vessels of 700 or 800 tons. Its magazines of ordnance, docks, ropewalks, building slips, cannon foundry, arsenal, and marine hospital, one of the largest and noblest buildings of the kind in Europe, and the bath, large enough to contain 3000 convicts, are all worthy of notice. *Saintes*, a very ancient town on the left bank of the Charente, still possesses several remains of antiquity; particularly the ruins of a triumphal arch, an aqueduct and amphitheatre, and a circus.

Cher.—††BOURGES, 19,730; *Saint Amand-Mont-Rond*, 6936; *Sancerre*, 3032; Aubigny, 2169; Chateau-neuf-sur-Cher, 2019; Dun-le-Roi, 3874; Lignieres, 1987; Meung-sur-Yevre, 3310; Vierzon (village), 3264; Vierzon (ville), 4706; Ivoy-le-Pre; Precy.

Bourges, the chief town of the department and formerly the capital of Berry, is irregularly built at the confluence of the Auron and the Yevre. Its cathedral is reckoned one of the finest gothic buildings in Europe. *St. Amand*, at the confluence of the Cher with the Marmaude, is the most commercial town of the department. It manufactures wooden clogs and leather, and there are forges, cannon foundries, and porcelain works in the vicinity.

Correze.—† TULLE, 8689; *Brives-le-Gaillarde*, 8031; *Ussel*, 3963; Allassac, 4049; Argentat, 3121; Beaulieu, 2415; Bort, 2291; Chamboulive, 3036; Donzenac, 3219; Lubersac, 3502; Meymac, 3130; Treignac, 2704; Uzerche, 3214; Turenne; Pompadour.

Tulle is a small ill built, but industrious commercial town, the centre of a trade in fire-arms, which are produced at the royal manufactory of *Souilhac*, a small town at the gates of Tulle. *Turenne* and *Pompadour* gave titles to two of the most celebrated characters in the history of France. The castle of *Turenne*, perched on the top of a precipitous rock, is considered one of the oldest in the kingdom. *Pompadour* is a village with a royal stud, and a fine castle, given by Louis XV. with the title of Marchioness, to his favourite mistress, Jeanne Antoinette Poisson.

Corsica.—†AJACCIO, 9531; *Bastia*, 9531; *Calvi*, 1175; *Corte*, 3282; *Sartene*, 2715; Bastelica, 2314; Bocognano, 1992; Bonifacio, 2944; Calenzana, 1974; Ghisoni, 1535; Porto Vecchio, 1738.

Corsica, situate between 41° and 43° N. lat. and 8° and 10° E. long. is about 115 miles in length from north to south, and 64 miles broad, and contains an area of 2852 square geographical miles. The island is covered by a group of mountains, which are intersected by narrow valleys and plains. The one-half of the surface is waste, and of the other 195,500 acres consist of wood. Corsica abounds with chestnut and walnut trees; almonds, citrons, and oranges, grow well; indigo and cotton have been tried with perfect success; and with equal success it is thought, the nopal, which furnishes food to the cochineal insect, the coffee shrub, the sugar-cane, and many other tropical plants might be cultivated. The wild olive grows naturally in the woodlands; and if the people could be taught to practice grafting, great quantities of oil might be made for exportation; whereas at present the export of oil is worth only about £30,000 sterling. The total value of its exports of every kind to France is only about a million and a half francs, or £60,000 sterling. The silk of Corsica is superior to that of Italy, and if the cultivation of the mulberry tree were properly attended to, this branch of industry might be a source of immense wealth to the island. The wines also are exquisite, but the vineyards occupy less than 40,000 acres. The forests of oak, fir, and larch, would furnish ample supplies for shipbuilding. The coasts contain several very safe harbours, and the fine roads of Ajaccio, Calvi, St. Florent (St. Fiorenzo), Valinco, and Porto Vecchio, would afford accommodation to numerous fleets. Notwithstanding these natural advantages, there is not in the island a single maritime establishment, and its magnificent forests are allowed to remain uncut. The same is also the case with its mineral riches; its marbles, porphyries, and granites, are untouched; and for manufacturing its stores of iron there are only ten forges, all at La Catalan. Coral is fished along the east side of the island from Bonifacio to Cape Corse. Corsica was subject for a long time to the republic of Genoa; but was transferred to France in 1768. In 1792, it was taken by the British, who retained it for two years; it has ever since remained in subjection to France, and now forms one of the 86 departments of the kingdom, and the seventeenth military division. Population in 1836, 207,889.

Ajaccio, on the west coast, a small episcopal city, very neatly built, with a harbour, and protected by a citadel, is the capital of the department. It is only noted, however, as the birth-place of Napoleon Bnonaparté, to whose memory a fine column has been lately erected there. *Bastia*, on the east coast, is the largest and most populous town in the island, and the principal place of commerce. It was formerly the capital, and is now the residence of the commandant of the 17th military division. Bastia has a small harbour, a college, a society of instruction, and a library. *Calvi* is a small town, with an excellent harbour, on the N.W. coast. The only other places worth notice are,—*Corte*, a small town high up among the hills; *Bonifacio*, a small seaport town, at the southern extremity of the island; and *Porto Vecchio*, a small town, with a spacious harbour and a *Saline*, the only one in the island.

Cote d' Or.—†DIJON, 25,552; *Beaune*, 9908; *Chatillon-sur-Seine*, 4175; *Semur*, 4088; Arnay-le-Duc, 2563; Auxonne, 5287; Brascy-en-Plaine, 1618; St. Jean-de-Lône, 1744; La Roche-en-Breuil, 2170; Meursault, 2066; Montbard, 2074; Saulieu, 3050; Selongey, 1687; Seurre, 3591; Vitteaux, 1919; Pelleray-sur-l'Ignon; Nuits; Pomard; Volney; Semur.

Dijon, the ancient capital of Burgundy (Bourgogne), is situate in a fertile plain watered by the Ouche and the Suzon, which meet here. The town is neat, contains wide streets lined with elegant houses, is a bishop's see, and the capital of the 18th military division. It maintains a considerable trade in wine and flour.

Cotes du Nord—†SAINT BRIEUC, 10,420; *Dinan*, 8041; *Guingamp*, 6100; *Lannion*, 5371; *Loudeac*, 6736; Begard, 3768; Bourbriac, 3613; Saint Brandan, 3342; Corseul, 4180; Etables, 3004; Evran, 4056; Glomel, 3971; Lamballe, 4390; Laniscat, 3080; Lonragat, 5004; Moncontour, 1670; La Motte, 3198; Paimpol, 2108, Plaintel, 4185; Pledran, 3578; Plelo, 5015; Plemet, 3013; Plemy, 3680; Plenee Jugon, 4537; Plerin, 4896; Plessala, 3500; Plestin, 5040; Plenbian, 4323; Pleudihen, 4869; Ploeue, 5133; Ploe-

zal, 3153; Plouarct, 4915; Plonasne, 3033; Ploubaslanec, 3074; Plouberre, 3582; Plouer, 3801; Plouczec, 4138; Plougouver, 3326; Plouguenast, 4048; Plougernevel, 3043; Plouha, 5041; Ploumillian, 3100; Plumieux, 3584; Pontrieux, 1647; Pordic, 4430; Quintin, 4293; Treguier, 3178; Trévé, 3041.

Saint Brieuc is a fine episcopal town, with a harbour on the Gouet; from which a number of ships are sent to the Newfoundland cod-fishery, to the South Seas, and the Antilles. *Guingamp* is noted for its cotton manufactures, and for a species of cloth to which it has given its name (Ginghams.)

Creuse.—GUERET, 3921; *Aubuson*, 4847; *Bourganeuf*, 2849. *Boussac*, 757; Felletin, 3228; La Souterainc, 2921.

Dordogne.—†PERIGUEUX, 8956; *Bergerac*, 8557; *Nontron*, 3246; *Riberac*, 3954; *Sarlat*, 6056; Belves, 2363; Saint Cyprien, 2375; Jumilhac, 3188; Montignac, 3922; Miremont.

Perigueux, upon the Isle, an episcopal city, is small and ill built, but has some trade. It was the capital of the ancient district of Perigord, and contains the ruins of an amphitheatre, aqueducts, public baths, inscriptions, and particularly a tower called the Tower of *Vesone*, a round building, 195 feet in circumference, and 160 high, without doors or windows, which is considered by antiquarians as the remains of a temple of Venus.

Doubs.—†BESANÇON, 29,167; *Baume-les-Dames*, 2467; *Pontarlier*, 4707; *Montbeliard*, 4767; Ornans, 2982; Boussiere; Chatillon-sur-Lison; Chenecy: Mandeure; St. Hippolyte; Morteau; Fort de Joux.

Besançon, a very ancient and strong city, one of the best built in the kingdom, is the seat of an archbishop's see, and of a royal court, and the capital of the 6th military division. It is the *Vesontio* of Julius Cæsar, and still contains several Roman antiquities. The inhabitants are distinguished for their manufacturing industry, and particularly for an extensive manufacture of *horlogerie* (clocks and watches.) *Fort de Joux*, on the frontier, near Pontalier, 27 miles S.E. of Besançon, is built upon an isolated hill about 600 feet high, and has been sometimes used as a state prison. The most distinguished of its involuntary inmates were Mirabeau, and Toussaint Louverture.

Drome.—†VALENCE, 10,406; *Die*, 3555; *Montelimar*, 7560; *Nyons*, 3397; Bourg du Peage, 3577; Le Buis, 2180; Chabeuil, 4452; Crest, 4901; Dieu-le-fit. 3952; Saint-Donat, 2084; Livron. 3275; Loriol, 3048; Moras, 4055; Pierrelatte, 3447; Romans, 9285; Tain, 2340; St. Valliers.

Valence, a small episcopal city, upon the left bank of the Rhone, contains an industrious commercial population. In its cathedral, a fine monument by Canova has been raised to the memory of Pope Pius VI. *Romans*, upon the Isere, is noted for the extensive culture of mulberry trees, the dressing and spinning of silk, and other branches of industry, and is the seat of the diocesan seminary of the department. *Tain* is famous for wine and spun silk; and is connected with Tournon, across the Rhone, by a fine suspension bridge. *Chabeuil*, *Crest*, and *Dieu-le-fit*, are well-known manufacturing towns, particularly the last, the prosperity of which is always increasing. *Nyons*, is a small town, only remarkable for a bridge over the Aigue, which is attributed to the Romans. *Die*, is also noted for its antiquities.

Eure.—†EVREUX, 9963; *Les Andelys*, 5168; *Bernay*, 6605; *Louviers*, 9885; *Pont Audemer*, 5305; Gisors, 3553; Neufbourg, 2118; Verneuil, 4178; Vernon, 4885.

Evreux, upon the Iton, a small episcopal city, possesses several Roman antiquities; as an aqueduct, baths, a large theatre, mosaics, &c. Its cathedral is considered one of the finest churches in France. *Verneuil*, is a small town noted for the kind of pottery called Armantieres, and for other articles manufactured there. During six centuries this town was considered a place of great importance in time of war; but its fortifications have now been demolished, and fine walks laid out upon their site. *Les Andelys*, a very ancient town, noted in the history of Philip Augustus and Richard Cœur-de-Lion. A few miles from Les Andelys are the celebrated copper foundries of *Romilly*, which consume every year 1181 tons of copper, 296 of zinc, 50 of iron, and 76,000 bushels of charcoal. *Bernay*, pleasantly situate on the right bank of the Charentonne, is celebrated for its horse fair, one of the most important in the kingdom. *Pont Audemer*, an ancient town on the Rille, a few miles above its confluence with the Seine, is the centre of a very active industry, in tanneries, alum leather, and cotton thread, &c. *Quillebœuf*, is a very small town on the left bank of the Seine, with a harbour, where the large vessels stop which cannot go up to Rouen. *Louviers*, or *Loviers*, upon the Eure, was formerly a fortified town, and known in history, but is now chiefly remarkable for its extensive cloth manufactures. It is situate on both banks of the river; the old town is built almost entirely of wood, but the newer parts are built of brick and hewn stone. The cathedral is a magnificent building, and appears to have been erected about the time of the first crusade. *Ivry*, in the south-eastern border of the department, is noted for the victory gained by Henry IV. over the League in 1590. *Vernon*, is a small town on the Seine, with a college. *Conches*, a market town, with a great forge, that produced the iron work of the bridges Des Arts and Austerlitz at Paris, and the new spire of Rouen cathedral. *Rugles*, a large town noted for its manufacture of pins, Paris points, needles, &c.

Eure et Loir.—†CHARTRES, 14,439; *Chateaudun*, 6461; *Dreux*, 6249; *Nogent-le-Rotrou*, 6825; Arrou, 3084, Brou, 2263; Illiers, 2937.

Chartres, an episcopal city, situate upon the Eure, 40 miles from Orleans, and 50 from Paris, is the centre of the corn and wool trade of the Beauce. It consists of an upper and a lower town, the former of which is the more ancient. The cathedral, built in the eleventh century, is the largest church in France, and one of the largest and most magnificent gothic temples in Europe. About 12 miles N.N.E. of Chartres is *Maintenon*, a village remarkable for a fine castle, which gave its name to the wife of Louis XIV., and for a superb unfinished aqueduct, upon which that monarch employed several thousand soldiers for several years, for the purpose of carrying the waters of the Eure to Versailles. Behind the walls of the park is a plain covered with Druidical monuments, which the country people call Gargantua's Stones.

Finistere.—†QUIMPER, 9860; *Brest*, 29,860; *Chateaulin*, 2,426; *Morlaix*, 9596; *Quimperlé*, 5275; Bannalec, 4183; Briec, 4481; Carhaix, 1939; Cleder, 4515; Crozon, 8034; Fouesnant, 3120; Guiclan, 3148; Guipavas, 5332; Kerlouan, 3204; Lambezellec, 7739; Landerneau, 4933; Lannilis, 3179; Lesneven, 2404; Moëlan, 3839; Plabennec, 3831; Pleiber-Christ, 3062; Pleiben, 4508; Ploneour-Menez, 4127; Plonevez-du-Faou, 3532; Ploudalmezeau, 3023; Ploudaniel, 3233; Plouescat, 3017; Plougasnou, 3827; Plougastel, 5515; Plougouven, 4193; Plougerneau, 5546; Plouider, 3017; Plouigneau, 4576; Plounevez-Lochrist, 4347; Plourin, 3020; Plouvorn, 3182; Saint Pol de Leon, 6692; Pont l'Abbé, 2785; Poullaouen, 3544; Roscoff, 3332; Scaër, 3676; Sizun, 3638; Saint Thegonnec, 3648; Tregune, 3029.

Quimper, is a small town with a harbour that admits vessels of 200 tons. *Brest*, the principal station of the French navy, is situate partly on the slope of a hill on the north side of one of the finest harbours in Europe, near the western extremity (Finistere) of the kingdom. The town is not large, but is compactly built, and regularly fortified. The harbour consists of a large land-locked bay upwards of 20 miles in circumference, with two deep branches, the one of which receives the river of Landerneau, and the other the river of Aulne. It has but one narrow entrance (gulet) defended by strong forts on both sides, and the interior is also commanded by formidable batteries. The water is deep enough for the largest vessels, and there is room sufficient for 500 sail of large ships to ride se-

curely. The basin is 5 or 6 miles across, and the principal anchorage is about a mile from the town. A magnificent arsenal, the vast building slips, magazines and workshops, the barracks, built upon a long esplanade, are the principal buildings. The town is separated from the suburb of *Recouvrance* by a deep tide inlet, alongside of which is the dockyard. There is also a *bagne* (hath) situate on the top of a hill, a large building sufficient to contain 4000 convicts. Brest is also the seat of one of the maritime prefects. It was but a fishing village till 1631, since which time it has risen to be a large and populous town. Besides the ordinary or civil population, there are about 3000 workmen attached to the dockyard, 2500 convicts, and a garrison of 4000 men. *Morlaix*, is a small industrious town, with a well frequented harbour; and near it is *St. Pol de Leon*, a small town, with a harbour, a cathedral, and a cottage.

Gard.—†NIMES, 41,264; *Alais*, 12,077; *Uzes*, 6162; *Le Vigan*, 4909; Aigues-Mortes, 2897; Aigues-Vives, 1687: Aimargues, 2182; Anduze, 5554; Aramon, 2447; Bagnols, 4902; Barjac, 1975; Beaucaire, 9967; Calvisson, 2692; Gallargues, 2096; Generac, 1883; Laudun, 2260; Margueritte, 1925; Milhaud, 1613; Montfrin, 2331; Le-Pont-Saint-Esprit, 4853: Roquemaure, 4138; La Salle, 2270; St. Ambroix, 2947; St. Gilles, 5561; St. Hippolyte, 5214; St. Jean-du-Gard, 4128; St. Quentin, 1994; Saure, 3021; Sommieres, 3632; Sumene, 3017; Vallerangue, 3895; Vauvert, 4055; Villeneuve d'Avignon 3564.

Nimes (Nismes) is a thriving commercial city, with numerous manufactories of silk, flannel, shawls, napkins, &c.; an extensive trade in groceries, drugs, raw silk, and organsine; besides establishments for distilling brandy, and for dyeing. It is an ancient Roman city (*Nemausus*), and still retains several monuments of its former splendour; as an amphitheatre, capable of holding 17,000 spectators; an ancient temple (maison carrée), repaired by Louis XIV and Louis XVIII; a triumphal arch, and a large tower, which rises in the form of a pyramid, with seven sides at the base, and eight at the top. At *Remoulin*, a small town upon the Gard near Nimes, is a magnificent Roman aqueduct, known by the name of the *Pont-du-Gard*, built to convey the water of the fountain of Aure to the naumachia of the ancient Nemausus. It consists of three series of arches piled upon each other, and is 840 feet long, 20½ wide, and 150 feet high, above the water of the river. *Beaucaire*, on the right bank of the Rhone, 15 miles E. by S. of Nimes, is a small well-built town, celebrated for its fair, which is held every year, from the 22d to the 28th of July. During this time the large meadow along the Rhone is covered with tents, to furnish accommodation for the numerous traffickers who flock to it from all parts of central and southern Europe, and even from the Levant. An iron chain-bridge connects Beaucaire with Tarascon, on the left bank of the Rhone. *Alais*, 23 miles N.W. of Nimes, on the river Gardon, is the centre of a great trade in raw and wrought silk, and of several other kinds of manufactures. The rich iron and coal mines which have been discovered in the neighbourhood have contributed powerfully to its prosperity. A railroad is forming to connect it with Beaucaire. *Roquemaure*, a small town on the right bank of the Rhone, north-east of Nimes, has an important manufacture of comfits, of which 20,000 tons are exported annually. Thirty miles N.N.E. of Nimes, is a small town on the right bank of the Rhone, which takes its name of *Pont-Saint-Esprit* (Holy-Ghost-bridge) from a magnificent bridge across the Rhone, consisting of 26 arches, and about half a mile long (410 toises) *Aigues-Mortes*, upon the canal of the Grande Robine, 20 miles S. of Nimes, is a small town of historical celebrity, where Saint Louis embarked on his ill-fated crusade. It was supposed, from that circumstance, by modern naturalists, to have been then a seaport, though the sea is now several miles distant; but M. Waysse de Villiers has proved that the sea never came near Aigues-Mortes, and that St. Louis embarked in a sloop upon the canal, which might be done even at this day. In its vicinity are the vast saltpits of *Peccais*, defended by a fort of the same name, the annual produce of which is valued at 1,500,000 francs (£60,000 sterling).

Garonne Haute.—††TOULOUSE, 59,630; *Muret*, 3787; *Saint Gaudens*, 6179; *Villefranche*, 2652; Aspet, 5575; Auterive, 3172; Boulogne, 1587; Cazeres, 2597; Cintegabelle, 3738; Grenade, 4240; Montesquieu, 3717; Montrejean, 2991; Revel, 5456; Villemur, 6063; Saint Beat; St. Bertrand-de-Comminges; St. Martory: Bagneres de Luchon.

Toulouse, formerly the capital of Languedoc, is a fine city, advantageously situate on the right bank of the Garonne, on a plain between the river and the Canal du Midi, 130 miles S.E of Bordeaux. Within these twenty years, the trade of Toulouse has experienced a considerable increase; and scythes and files, which were formerly imported from abroad, are now supplied to nearly the whole of France from this city, where the most of them are made at the magnificent steel-works of MM. Talabot. Here also is the principal cannon foundry of the kingdom. The *Bagneres de Luchon*, at the southern extremity of the department, 70 miles from Toulouse, is a small town but daily increasing, and possesses the finest establishment of baths in the kingdom. In the same neighbourhood is the valley of the *Aste*, one of the wildest in the Pyrenees, containing two lakes, *Seculejo* and *Espingo*, which are connected by a waterfall 800 feet high.

Gers.—††AUCH, 9801; *Condom*, 7144; *Lectoure*, 6495, *Lombez*, 2243; *Mirande*, 2532; Eauze, 3202; Gimont, 2952; L'Ile Jourdain, 4307; Vic Fezensac, 3579; Castera-Vivent.

Auch is an archiepiscopal city, with an ancient cathedral, the centre of a great cotton manufacture, and 100 miles S.E of Bordeaux.

Gironde.—††BORDEAUX, 109,467; *Bazas*, 4255; *Blaye*, 3855; *La Reole*, 3787; *Lesparre*, 950; *Libourne*, 9838; Castillon, 2897; Langon, 3566; Pauillac, 3352; La Teste, 2840; Sainte Foy, 2612; Bourg; St. Laurent de Medoc.

Bordeaux, formerly the capital of the duchy of Guienne, and one of the finest, most commercial, and most populous cities in the kingdom, is situate on the west or left bank of the Garonne, in the ancient district of the Bordelais, 60 miles from the sea, and 320 S.S.W. of Paris. In the old town, the streets are narrow and winding, and the places irregular; but in the new town, particularly in the fine districts of Chapeaux-Rouge, and Chartrons, there are wide and straight streets, fine places, elegant houses, and several remarkable buildings, mostly lighted with gas. Few places indeed have undergone greater and more beneficial changes than Bordeaux during the last thirty years. The ancient Chateau Trompette, in the middle of the town, has been demolished, and its site converted into beautiful public walks; and a magnificent bridge of 17 arches, and 486 metres long, has been built across the river, which here expands into a fine navigable basin. Among the numerous buildings that adorn this city are the cathedral, a fine gothic structure; the church of the Feuillans, containing the tomb of Montaigne; the grand theatre, one of the finest in Europe; the exchange, a building with a vast dome, considered one of the finest establishments of the kind in Europe; the ancient archiepiscopal palace; and the remains of a Roman amphitheatre. Bordeaux has manufactures and works of every kind: the most important of these are manufactories of vinegar, nitrous acid, and refined sugar, distilleries, cotton-spinneries, paper-mills, manufactories of china, hats, bottles, stockings, wire-cloth, wax and floor-cloths. It is also the centre of the wine trade of all the western, and likewise of great part of the central and southern parts of the kingdom; and the wines still form the principal article of its exports, though the trade has fallen off very much since 1789. In that year so many as 100,000 tuns were exported; but in 1831, the number was only 24,000. There are about 200 ships belonging to Bordeaux engaged in the trade with America, Africa, and India: the citizens likewise take an active share in the cod and whale fishery; and seven hundred workmen are employed in the shipbuilding yards. The municipal revenues amount to £120,000 a-year, and the customs to nearly

£500,000. Off the entrance of the Gironde is the tower of *Cordouan*, the most celebrated light-house in France, situate upon a small island, four miles out from the mouth of the river. It was erected by order of king Henry IV., begun in 1584, and finished in 1611. Its original height was 169 French feet, and the diameter of its base 125. The light was originally produced by a coal fire on the top of the tower, but is now furnished by lamps and reflectors of great power, invented by Fresnel.

Herault.—† Montpellier, 35,825; *Beziers*, 16,769; *Lodève*, 9919; *Saint Pons*, 6267; Agde, 8202; Aniane, 2480; Bedarrieux, 5998; Bessan, 2228; Caux, 1814; Cazoules-les-Beziers, 2070; Cette, 10,638; Clermont, 6199; Cournonterrel, 1603; Florensac, 3512; Frontignan, 1877; Ganges, 4193; Gignac, 2779; Lunel, 6260; Marseillan, 3687; Marsillargues, 3292; Meze, 4400; Montagnac, 3440; Montpeyroux, 1713; Pezenas, 7847; Pignan, 1889; Pomerols, 1609; Ponssan, 1916; Puisserguier, 1610; Saint Andre-de-Sangonis, 2131; St. Bausille-de-Putois, 1622; Saint Chinian, 3270; Saint-Jean-de-Fos, 1507; La Salvetat, 3986; Scrignan, 1997; Servian, 2174; Vias, 1761; Villeneuve-les-Beziers, 1996; Villevrayac, 1754.

Montpellier, one of the finest cities in the south of France, is situate on a lofty hill, from which there is a magnificent view. It has a flourishing trade, and numerous manufactories of printed cottons, cloth, chemical productions, &c. *Cette*, a small trading town with a fine harbour, built in the form of an amphitheatre, between the sea and the Etang de Thau. Its fortifications defend the entrance of the Canal du Midi. A great quantity of salt is made in the Etang du Thau, in the midst of whose salt waters a soft fresh-water spring rises with great force. *Beziers* is a fine town, built on a hill which commands a view of a rich valley, watered by the Orb. In the 13th century, during the crusade against the Albigenses, Beziers was sacked by the crusaders, under the command of Arnauld, Abbot of Citeaux. When his followers asked him, before storming the town, by what signs they might distinguish the Catholics, he answered—"Kill all, let God discover his own!"

Ille et Vilaine.—† Rennes, 29,680; *Fougeres*, 7677; *Montfort-sur-Meu*, 1316; *Redon*, 4504; *Saint Malo*, 9981; *Vitré*, 8856; Bain, 3490; Bains, 3915; Bais, 3867; Bazouges-la-Perouse, 4500; Cancale, 4880; Combourg, 4774; Dol, 3939; Erce-en-Lamée, 3188; Fourgeray, 5501; Guichen, 3495; Guipry, 3212; Iffendic, 4292; Janze, 4051; La Guerche, 4219; Louvigné-du-desert, 3319; Martigné, 3696; Maure, 4282; Miniac-Morvan, 3041; Noyal-sur-Vilaine, 3432; Paimpont, 3791; Pirc, 3564; Pleine-Fougeres, 3684; Plelan, 3305; Pleurtuit, 8352; Rheticrs, 3036; St. George-de-Reintembault, 3258; Saint Servan, 9975.

Rennes, the ancient capital of Brittany (Bretagne), consists of two towns: the lower situate on the left bank of the Vilaine, and liable to inundation, and the upper built upon a regular plan, and containing several remarkable buildings. It has considerable manufactures of sail-cloth, and several wax bleaching-works; and its trade has been greatly increased since the opening of the canal of the Ille and Rance, which connects the ocean and the English Channel by Redon, Rennes, Dinan, and Saint Malo. *Saint Malo*, one of the best built towns in Brittany, is a place of strength, and is surrounded with delightful walks. It is situate on the coast of the Channel, upon a peninsula, which is connected with the mainland by a wall of 200 metres (650 feet) in length. Though of limited extent, and with a small population, it is one of the principal ports in the kingdom for its mercantile shipping, for its coasting trade, its trade with India, and particularly for the cod-fishery. The harbour is large and safe, but of difficult access. It also contains a royal tobacco manufactory. In the immediate neighbourhood of St. Malo are *Cancale*, celebrated for its oysters, of which it supplies enormous quantities for the consumption of Paris; and *St. Servan*, with two harbours, one of which is used by the royal navy, and the other is occupied by ships engaged in the cod-fishery. At *Fougeres*, 27 miles N.E. of Rennes, are several Druidical remains in the midst of a fine forest. *Redon*, upon the Vilaine, below Rennes, is of some importance for its shipbuilding yards, and its transit trade in the wines of Bordeaux, and other produce of the south of France.

Indre.—Chateauroux, 11,587; *Le Blanc*, 4804; *Issoudun*, 11,661; *La Châtre*, 4343; Argenton, 3964; Buzançais, 4416; Chabris, 2511; Chatillon, 3339; Deols, 2113; Levroux. 30 8; Valençay, 3095; Vatan, 2,764.

Chateauroux is a small city near the left bank of the Indre, 75 miles S. by W. of Orleans, and the centre of an extensive manufacture of common cloth. At *Valençay*, 26 miles N. by W. of Chateauroux, is a fine castle, which belonged to the late Prince Talleyrand, and was inhabited by Ferdinand VII., king of Spain, from 1808 to 1814.

Indre et Loire.—Tours, 23,235; *Chinon* 6859; *Loches*, 4774; Amboise, 4613; Beaulieu, 2222; Bourgueil, 3556; La Chapelle-sur-Loire, 3653; Chateau-Renaud, 2168; Chouzé-sur-Loire, 3890; Sainte Maure, 2259; Preuilly, 4131; Richelieu, 2782.

Tours, formerly the capital of Touraine, is situate on the left bank of the Loire, in the middle of a delicious and fertile plain, 130 miles S.W. of Paris. It is inhabited by an industrious commercial population, and is the seat of an archbishop's see. At *Mettray*, a league from Tours, there is erecting a large penitentiary for the reformation of juvenile offenders. About 16 miles farther up the river is *Amboise*, a very ancient little town, remarkable for a castle inhabited by several of the kings of France. It was in this town also that the civil wars on account of religion broke out, and that the name of *Huguenots* was first given to the Calvinists in 1560. Its parish church of St. Denis was built by Saint Martin of Tours; and near the ancient convent of the Minimes are curious underground works called Cæsar's Granaries.

Isère.—Grenoble, 24,888, *La-tour-du-Pin*, 2331; *Saint Marcellin*, 2775; *Vienne*, 14,079; Les Avenieres, 3428; Beaurepaire, 2138; Bourg-d'Oysans, 3052; Bourgoin, 3762; Cremieux, 2401; Jallieu, 3026; La Cote Saint André, 4578; La Mure, 2785; Le Pont de Beauvoisin, 2139; Saint Chef, 3397; Saint Geoire, 4635; Saint George, 2872; Saint Jean de Bournay, 3392; Saint Laurent du Pont, 3156; Tullins, 3807; Vinay, 3490; Vizille, 2750; Voiron, 6924; Voreppe, 3280; Sassenage; Allemont; Rives; Saint Gervais; La Grande Chartreuse.

Grenoble, 60 miles S.E. of Lyon, formerly the capital of Dauphiné, is a fortified and industrious manufacturing city, upon the river Isere, the seat of a bishop's see, and of a royal court. It is the centre of a very active trade in gloves and liquors; of the former of which about 300,000 dozens are manufactured annually, of the value of about £160,000 sterling: and about a third of them are exported to England. About 12 miles N. by E. of Grenoble is the *Grande Chartreuse* a famous monastery, in a romantic situation, of very difficult access, and formerly regarded as the head-quarters of the severe but wealthy order founded by Saint Bruno in 1084. *Vienne*, 17 miles S. of Lyon, built on the slope of the left bank of the Rhone, is a large thriving town, with numerous branches of industry. In Roman times it was the residence of the prefect of Gaul, and of the commandant of the flotilla kept upon the Rhone, and still possesses several Roman antiquities, as an obelisk and a triumphal arch, the remains of a temple of Augustus, of an amphitheatre and aqueduct, a square house (*maison caree*), &c.

Jura.—Lons-le-Saulnier, 7918; *Dôle*, 9927; *Poligny*, 6005; †*Saint Claude*, 5222; Arbois, 6741; Champagnole, 2934; Orgelet, 2367; Saint Amour, 2595; Salins, 6554; Syrod.

Landes.—Mont de Marsan, 3774; *Dax*, 4716; *Saint Sever*, 5494; †Aire, 3509; Hagetman. 3053; Peyrehorade, 2453; Saint Esprit, one of the suburbs of Bayonne, 5895.

Loir-et-Cher.—Blois, 13,138; *Romorantin*, 6985; *Vendôme*, 7771; Mer, 3733; Mondoubleau, 1917; Montoire, 3072; Saint Aignan, 2772; Selles-sur-Cher, 4121; Chambord; Savigny-sur-Braye.

Blois, upon the Loire, a small but very ancient city, and the centre of the trade in Orleans brandy. It is here that the magnificent embankments for the protection of the land against the encroachments of the Loire commence. A few miles distant is *Chambord*, a large chateau, built from the designs of Primatice, an irregular assemblage of towers and turrets, but nevertheless of an imposing appearance. It stands in a park 18 miles in circumference, and was purchased in 1820 from the Princess of Wagram, as an appanage to the Duke of Bordeaux.

Loire.—MONTBRISON, 5265; *Roanne*, 9260; *Saint Etienne*, 33,061; Belmont, 3184; Bourg Argental, 2502; Charlieu, 3424; Chazelles-sur-Lyon, 3079; Firminy, 3779; La Fouillouse 3471; Le Chambon, 1600; Montaud, 3750; Outre-Furens, 3118; Panisieres, 3518; Pelussin, 3240; Rive de Gier, 9706; St. Bonnet-le-Chateau, 2169; Saint Chamond, 7475; St. Genet Malifaux, 3274; St. Jean Bonneford, 4022; St. Julien en Jarret, 3231; St. Just-sur-Loire, 2500; St. Paul en Jarret, 3161; St. Rambert, 3015; St. Symphorien-de-Lay, 1560; Usson, 3800; Valbenoite, 4433; Andrezieux; St. Galmier; St. Alban.

St. Etienne, 35 miles S.W. of Lyon, is one of the most industrious towns in the kingdom. It is situated in the midst of coal mines, and is celebrated for its fine manufactures of arms, ironware, cotton thread, and silk ribbons. It contains likewise several scientific and literary establishments; and is connected with the basins of the Rhone and the Loire by three railways: one from St. Etienne to the Loire; the second from the Loire to Roanne; and the third from St. Etienne to Lyon. Though the last is only 34 miles in length, yet such is the inequality of the country, and so great has been the anxiety of the engineers to preserve a perfect level, that there are no less than 20 tunnels between the two terminations. One of these is a mile long, while another, half a mile in length, is carried under the bed of a river which crosses the line. The various manufactures of St. Etienne employ upwards of 50,000 people, the annual produce of whose labour is estimated at £3,125,000 sterling.

Loire Haute.—LE PUY, 14,930; *Brionde*, 5099; *Yssengeaux*, 7166; Bas, 5524; Craponne, 3828; Langeac, 3109; Le Monastier, 3420; Monistrol, 4145; Retournac, 3887; St. Didier la Sauve, 3795; St. Paulien, 3017; Saugues, 3833; Tence, 5730; Polignac; Expailly; Goudet.

Les Puy en Velay, is situate on the left bank of the Loire, at the foot of the volcanic rock of Corneille, and not far from the rocks of Polignac, St. Michel, and Espailly. Besides its remarkable situation, it is also distinguished for its manufacturing industry; the principal articles of which are laces (dentelles and blond), and small bells, which for a century past it has supplied to the mulctiers, and carriers of the south and centre of France. The cathedral is remarkable for its antiquity, the magnificence of its ornaments, and the height of its spire; and was celebrated for centuries as the much frequented sanctuary of Our Lady of Puy, a small image of cedar-wood, brought from the East in the eighth century; and reverently visited by several popes, and by nine kings of France.

Loire-Inferieure.—†NANTES, 87,191; *Ancenis*, 3749; *Chateaubriand*, 3709; *Paimbœuf*, 3648; *Savenay*, 1845; Batz, 3643; Blain, 4899; Bouguenais, 3287; Cambon, 4930; Clisson, 2432; Coueron, 4053; Fay, 3483; Guemené, 3798; Guerande, 8190; Herbignac, 3175; Heric, 3349; La Chapelle-Basse-Mer, 4244; Le Croisic, 2288; Legé, 3213; Le Loroux, 4991; Machecoul, 3665; Montoir, 3985; Nort, 4751; Plessé, 3652; Pontchateau, 3300; Rezc, 4968; St. Etienne de Mont Luc, 4348; St. Joachim, 3061; St. Julien-de-Concellas, 3467; St. Nazaire, 3789; St. Philibert, 3200; Vallet, 5967; Varades, 3506; Vertou, 5686; Vieillevigne, 5451.

Nantes, a large episcopal city, is situate on the right bank of the Loire, 25 miles from the sea, and 210 S.W. by W. of Paris. It occupies a charming situation, is generally well built, and contains several regular *places*, fine quays, and elegant edifices, particularly in the quarter Graslin, the island Feydeau, and the faubourg of la Fosse. The cathedral, the exchange, the hotel of the prefect, the sight-hall *(salle de spectacle)*, the town-house, and the new school of navigation are the finest buildings. It contains likewise the remains of the palace of the ancient Dukes of Bretagne, and several important scientific and literary societies and institutions. Nantes is one of the most commercial cities in the kingdom, and one of the principal in Europe, having intercourse with India, China, and the principal ports of America. Great numbers of merchant ships are built here; and here also corvettes are built by the Government. Nantes likewise contains the general magazine of provisions and ammunition for the ports of Brest, Lorient, and Rochefort. The receipt of the customs amounts to between £300,000 and £400,000 yearly. *Paimbœuf*, on the left bank of the river, 20 miles below Nantes, is, properly speaking, the port of that city, for all the large ships that cannot reach Nantes anchor there and discharge and receive their cargoes. At *St. Philbert*, 14 miles S. by W. of Nantes, near the lake Grand Lieu, are two very curious Druidical monuments.

Loiret.—†ORLEANS, 40,161; *Gien*, 5177; *Montargis*, 6781; *Pithiviers*, 3957; Beaugency, 4883; Briare, 2730; Chateau-neuf, 3160; Chatillon-sur-Loing, 2126; Meung-sur-Loire, 4630; Puiseaux, 1970.

Orleans, formerly the capital of the Orleanais, situate upon the right bank of the Loire, 65 miles S. by W. of Paris, is generally well built, and is still distinguished as one of the most industrious commercial cities in the kingdom. It is chiefly famous for its manufacture of cotton and woollen twist, its sugar refineries, and vinegar works. The cathedral, a masterpiece of Gothic architecture, which remains unfinished; the monument of Joan of Arc, the bridge over the Loire, the corn-hall, the slaughter-houses, and the new quay, are the most remarkable structures which this city offers to the curiosity of the traveller.

Lot.—CAHORS, 12,050; *Figeac*, 6390; *Gourdon*, 5153; Castelnau, 4053; Gramat, 3428; Martel, 2903; Saint Céré, 3987; Souillac, 3096; Rocamadour.

Cahors is a place of great antiquity, but now chiefly remarkable as the centre of an important trade in tobacco and coarse wines.

Lot et Garonne.—†AGEN, 12,631; *Marmande*, 7345; *Nerac*, 6327; *Villeneuve d'Agen*, 10,652; Aiguillon, 4080; Clairac, 4949; Mezin, 3146; Montflanquin, 5201; Penne, 6005; Port Sainte Marie, 3079; Sainte Bazcilles, 2798; Sainte Livrade, 3243; Tonneins, 6494; Tournon, 7901.

Agen, situate on the right bank of the Garonne, is the entrepot of the trade between Bordeaux and Toulouse, and is famous for grafted prunes. *Villeneuve d'Agen* is situate upon the Lot, which here passes under a fine bridge, but it has little trade.

Lozere.—†MENDE, 5822; *Florac*, 2194; *Marvejols*, 3885; Langogne, 2720; Saint Chely, 1651; Villefort; Vialas.

Maine et Loire.—†ANGERS, 32,743; *Beaugé*, 3553; *Beaupreau*, 3207; *Saumur*, 10,652; *Segré*, 909; Beaufort, 5914; Chalonnes, 4969; Chemille, 3694; Chollet. 7315; Doué, 2479; Durtal, 3465; Jallais, 3163; La Pommeraye, 3100; Le May, 3315; Les Ponts de Ce, 3665; Longue, 4191; Mazé, 3897; Montreuil-Bellay, 1907; Ingrande; Doué; Pouancé.

Angers, formerly the capital of Anjou, is situate in a large plain watered by the Mayenne and the Loire, 170 miles S.W. of Paris. The town is large, and possesses one of the finest studs in France, a royal manufactory of sail-cloth, cotton thread, &c. In the neighbourhood are extensive slate quarries, which employ nearly 3000 workmen, and supply every year from 40 to 50 millions of square slates, and from 25 to 30 millions of other kinds. *Saumur*, on the left bank of the Loire, 28 miles S.E. of Angers, is an industrious commercial town, with a fine bridge over the Loire. In the neighbourhood are three

Druidical monuments, two of which are cromlechs, in good preservation, and the third is a natural obelisk, placed vertically on the ground.

Manche.—SAINT LO, 8121; *Avranches*, 7269; *Cherbourg*, 18,443; †*Coutances*, 8957; *Mortain*, 2511; *Valognes*, 6940; Barenton, 3106; Briquebec, 4255; Brix, 3088; Carenton, 2773; Granville, 7350; Hambye, 3684; Montebourg, 2523; Percy, 3182; Periers, 2605; St. Hilaire-du-Harcouet, 2759; St. James, 3104; St. Vaast, 3502; Sourdeval, 4280; Thorigny, 2184; Tourlaville, 3624; Villedieu, 3095.

Saint Lo is a small town on the right bank of the Vire, with several fine buildings, as, the Hotel de Prefecture; the church of Notre Dame, a structure of great elegance and lightness; and the church of Saint Croix, considered one of the most perfect Saxon buildings of France. St. Lo is the centre of a manufacture of coarse stuffs. *Cherbourg* is situate on the northern coast of La Manche, at the head of a deep bay, at the mouth of the small river Divette, about 100 miles S. of Portland Bill, in England. It is one of the principal military ports of France, and immense sums have been expended in forming docks and basins. The latter are large enough to contain fifty ships of the line always afloat; and the road or anchorage is formed and protected by a stupendous breakwater, 1933 toises (12,360 feet, or nearly 2⅓ miles) in length, constructed in the sea at a depth of 40 feet, with a navigable passage at each end. This is all that yet appears above water, but is only about the half of what is intended. Great exertions are constantly making to complete the work, which was begun in 1784. There is also a fine merchant basin, capable of containing 100 sail; but there is not much trade, except in the articles of eggs and fruit to Portsmouth and London, sheep and cattle to Jersey and Guernsey, and mules to Martinique. The western entrance and most of the anchoring ground is completely commanded by the formidable battery "du Homnet," with a double tier of guns. *Avranches* is a small town, with a college and a library. Its ancient cathedral no longer exists. *Coutances* is a small episcopal city, with a college, a school, and a small library. The cathedral is one of the finest Gothic buildings in France. *Granville* is a seaport town, which possesses a considerable number of vessels engaged in the Baffin's Bay and South Sea whale-fisheries, and the colonial trade. It has also a flourishing coasting trade, and a number of shipbuilding yards. Its commodious harbour was constructed in 1784. To the south of Granville is the deep bay of *Mont Saint Michel*, so called from an insulated rock of that name, about a league from the shore, with a small fortified town, sometimes used as a state prison. The rock stands dry at low water, and may then be approached on foot; but the tide rises so rapidly, that if a person should happen to be on the road between the rock and the continent when the flood is coming five miles off, he could not escape, even with the swiftest horse.*

Marne.—†CHALONS-SUR-MARNE, 12,413; *Epernay*, 5318; ††*Reims*, 35,971; *Sainte Menehould*, 2933; *Vitry-Le-Français*, 6976 · Aï, 2727 · Courtisols, 2070; Fere-Champenoise, 2049; Fimes, 2110; Sermaize, 1790; Suippes, 2324.

Chalons-sur-Marne, 95 miles E. of Paris, is a small episcopal city, regularly built, but the houses are chiefly of wood. Its school of arts and trades, with 460 pupils, which is supported at the public expense, is one of the most celebrated of that kind in the kingdom. *Reims*, 80 miles E.N.E. of Paris, upon the Vesle, is the seat of an archbishop's see, and the principal seat of the woollen manufacture. Its high antiquity, and its historical monuments render it still interesting. The cathedral, in which the kings of France were formerly crowned, is a building of colossal dimensions, profusely and richly ornamented, and altogether one of the finest and most remarkable gothic churches in Europe.

Marne Haute.—CHAUMONT-SUR-MARNE, 6318; † *Langres*, 7460; *Vassy*, 2583; Fayl-Billot, 2411; Joinville, 3035; Nogent le Roi, 2401; Saint Dizier, 6197; Voisey, 1811; Bourmont; Bourbonne les Bains.

Langres, a small episcopal city, is noted for its cutlery, and for the excellent millstones which it sends to the most distant parts of Europe. It occupies the site of the Roman *Andomadunum*; and its cathedral is a fine monument of the architecture of the middle ages. *Bourbonne les Bains*, is a small town with a magnificent mineral water establishment, and a large military hospital. *Saint Dizier* is a pretty little trading town, with a college, and a fine town house. *Chaumont*, the capital, is a fortified town, with a college, the remains of an ancient castle of the Counts of Champagne, and several fountains.

Mayenne.—LAVAL, 16,401; *Chateau Gontier*, 6143; *Mayenne*, 9797; Cassé le Vivien, 3728; Craon, 3610; Ernée, 5467; Evron, 3750; Lassay, 2807; Oisseau, 3734; La Poôté, 3291; Pre-en-Pail, 3344.

Laval is a large trading town with a college and library. *Mayenne* is a small town with a college, and is the centre of an extensive manufacture of linens and napkins.

Meurthe.—†NANCY, 29,783; *Lunéville*, 12,341; *Sarrebourg*, 2164; *Chateau-Salins*, 2708; *Toul*, 7304; Abreswiller, 1977; Baccarat, 2809; Badonvilliers, 2297; Blamont, 2281; Blenod, 1511; Cirey, 2193; Dieuze, 3892; Gerbevilliers, 3044; Phalsbourg, 3529; Pont-a-Mousson, 7218; Rosieres-aux-Salines, 2507; Saint Nicolas, 3043; Saint Quirin, 1960; Vezelise, 1742; Vic, 3186; Walscheid, 1783; Malzeville; Roville; Moiyenvic.

Nancy, is situate on the Meurthe, 180 miles E. of Paris; and is one of the best built cities of France. It was formerly the capital of Lorraine; and of late has become distinguished for the industry and commercial activity of its citizens. *Luneville* is a fine town, near the Meurthe, famous as the place where a treaty of peace was signed in 1801. *Phalsbourg*, situate on a height, is a very important fortress for the defence of the defile of the Vosges. *Toul* is also a strong town, the fortifications of which have lately been repaired.

Meuse.—BAR-LE-DUC, 12,496; *Commercy*, 3622; *Montmedy*, 2195; †*Verdun*, 9978; Ancerville, 2239, Etain, 3034; Ligny, 3212; Mouzay, 1857; Revigny, 1598; Saint Mihiel, 5822; Sorcy, 1634; Stenay, 3140; Varennes, 1652; Vaucouleurs, 2157.

Bar-le-Duc, situate on the slope of a hill watered by the Ornain, is an industrious commercial city; particularly noted for the preparation of fruit comfits. *Verdun*, on the Meuse, is an episcopal city, carries on an active trade, and is fortified. At *Aviothe*, a small village, is an ancient church, which is considered as one of the finest gothic structures in France. At *St. Mihiel*, on the Meuse, in the church of St. Etienne, is a holy sepulchre, made of a single block, adorned with 13 figures of remarkable beauty. *Montmedy* is an important fortified town; and at *Commercy*, are superb cavalry barracks, and a covered riding school.

Morbihan.—VANNES, 10,395; *Pontivy*, 5956; *Lorient*, 18,322; *Floermel* 4851; Auray, 3734; Baud, 5120; Bubry, 3611; Carentoir, 5341; Carnac, 3054; Caudan, 3475; Cleguerec, 3700; Elven, 3815; Gourin, 3626; Grandchamp, 4550; Guer, 3488; Guerne, 3386; Guidel, 4015; Hennebon, 4177; Josselin, 2654; Langonnet, 3715; Languidic, 6064; La Nouée, 3052; Maletroit, 1781; Mauron, 4229; Meneac, 3487; Mohon, 3293; Noyal-Pontivy, 8158; Palais, 3584; Peaule, 2277; Ploëmeur, 6029; Ploërdut, 4152; Plouay, 3816; Plumeliau, 3737; Pluviguer, 4534; Port-Louis, 2591; Questembert, 3561; Sarzeau, 6126.

Vannes is a thriving seaport town. *Lorient* is a fine town built in 1719 by the India Company, with a superb roadstead where the largest fleets may anchor in safety. Lorient is one of the five mi

* Le Petit Neptune Français, p. 38.

litary ports of the kingdom; and there are about 2000 workmen constantly employed in the dockyard; but there is little or no trade. *Port-Louis* is a fortified town at the mouth of the harbour of Lorient, with a citadel and heavy batteries which guard the entrance. *Quiberon*, a small town with a fort and harbour upon a peninsula, celebrated in the annals of the revolution for a descent made here by a body of French emigrants from England in 1795. At *Carnac*, 18 miles S.W. of Vannes, is one of the most remarkable Druidical monuments in existence, consisting of more than 5000 granite stones coarsely cut into the form of obelisks, set upon their points, and disposed in eleven rows.

Moselle.—†Metz, 44,416; *Briey*, 1755; *Sarreguimines*, 4189; *Thionville*, 5645; Bitche, 3132; Boulay, 2689; Bougonville, 2325; Forbach, 4281; Gorze, 1781; Grosbliederstroff, 1925; Lemberg, 2209; Longueville St. Avold, 2033; Longuyon, 1612; Longwy, 2483; Puttelange, 2290; Saint Avold, 3451; Sarralbe, 3544; Sierck, 2028.

Metz, situate at the confluence of the Moselle and the Seille, is an industrious trading city, very strongly fortified. *Bitche*, on the west slope of the Vosges, 60 miles E. of Metz, is remarkable for its fortifications, which are considered to be impregnable.

Nievre.—†Nevers, 15,085; *Chateau Chinon*, 3865; *Clamecy*, 5539; Cône, 5987; Corbigny, 2077; Decize, 3068; Donzy, 3566; La Charitié, 5068; Lormes, 2759; Pouilly, 3071; St. Pierre-le-Moutier, 2110; Varzy, 2909.

Nevers, the capital of Nievre and Nivernais, is situate at the confluence of the Nievre with the Loire, 135 miles S. by E. of Paris. The inhabitants are employed in industry and commerce, and produce chinaware which is considered to be the best in France; and also enamel, and glass pearls. Nevers contains also a large royal foundry, with 8 reverberating furnaces, and 12 boring benches. In the neighbourhood, at *Imphy*, is a great establishment formed for the preparation of sheet and hammered copper of every kind, and of tinplate, according to the English method. The establishment employs two steam-engines. And near the village of *Guerigny* is the *Chaufade*, a royal forge, for the manufacture of anchors and iron cables.

Nord.—Lille, 69,073, *Avênes*, 3166; †*Cambrai*, 17,646; *Douai*, 18,793; *Dunkerque*, (*Dunkirk*), 24,937; *Hazebrouck*, 7522; *Valenciennes*, 18,953; Aniches, 1926; Annœullin, 3053; Anzin, 4255; Armentieres, 6338; Avenes-les-St. Aubert, 2535; Baillenl, 9223; Baisieux, 1808; Bavay, 1635; Bergues, 5962; Berlaimont, 2068; Bertry, 1602; Bondues, 2841; Bourbourg, 2378; Bruille-Saint-Amand, 1919; Busigny, 2275; Cassel, 4234; Caudry, 3329; Clary, 2036; Comines, 5316; Condé, 5350; Crevecœur, 2001 Cysoing, 2465; Denain, 1691; Etaires, 6504; Faches. 1692; Fenain, 1914; Flers, 1658; Flines-les-Raches, 3241; Frênes, 3868; Gouzeaucourt, 2010; Gravelines, 4193; Hasprcs, 2726; Haulbourdin, 2151; Haussy, 2708; Hem, 1986; Hondscoote, 3833; Iwuy, 3458; La Bassee, 2480; Lagorgue, 3225; Landrecies, 3726; Le Cateau, 5946; Leers, 1821; Le Quenoy, 3191; Le Quenoy-sur-Deule, 4209; Lomme, 2067; Marc-en-Barœul, 3132; Marchiennes, 2505; Marcoing, 1508; Maretz, 1983; Marquette, 1616; Maubeuge, 6240; Merville, 5943; Morbecque, 3979; Neuvilly, 1824; Nieppes, 3221; Onnaing, 2712; Orchies, 3425; Quaroube, 1930; Quievry, 2516; Raimbeaucourt, 1935; Raimes, 2375; Rhieux, 1710; Roubaix, 18,187; Rumilly, 1579; Sainghin-en-Weppes, 2010; Saint-Amand, 8734; Saint Aubert, 2249; Saint Hilaire, 1725; Saint Pithon, 1617; Sameon, 1701; Saubzoir, 2159; Seclin, 2829; Solemes, 4995; Sobie-le-Chateau, 2477; Somaing, 2452; Steenwerck, 4747; Steenwoorde, 4022; Tourcoing, 17,973; Valincourt, 1928; Verlinghem, 1738; Viesly, 2373; Vieux-Berquin, 3517; Vieux Condé, 3976; Villers-Ghislain, 1984; Villers Outreau, 2438; Wallers, 2877; Wattrelos, 6791; Wazemmes, 8621; Willems, 1735; Wormhout, 4020.

Lille, 125 miles from Paris, situate upon the river Middle Doule, in the midst of a plain remarkable for its cultivation and fertility, is one of the best built cities of France; while its formidable works, its fine citadel, Vauban's masterpiece, and its situation on the frontier, render it one of the most important fortresses of the kingdom. It is also the seat of a variety of manufactures, and of a flourishing trade. *Douai*, or *Douay*, 20 miles S. of Lille; a fortified city on the Scarpe, with a flourishing trade. *Valenciennes*, at the confluence of the Rhonelle and the Scheldt, is an industrious and very strong town, with a citadel built by Vauban. *Cambrai* or *Cambray*, 110 miles N.N.E. of Paris, a fortified and trading town upon the Scheldt. *Dunkerque* or *Dunkirk*, one of the finest towns in France, is situate at the junction of the canals of Bergues, Bourbourg, and Furnes, and has a harbour, and a fine road, on the coast of the North Sea. It carries on an extensive trade; and is largely engaged in the whale fishery. *Gravelines* is a pretty little town, with a small harbour, which has a considerable share in the herring, mackerel, and cod fisheries.

Oise.—Beauvais, 12,867; *Clermont*, 2,715; *Compiegne*, 8,879; *Senlis*, 5,066; Bethisy-Saint-Pierre, 1561; Breles, 1726; Breteuil, 2284; Chantilly 2524; Cressy, 2619; Crevecœur, 2345; Grandvilliers, 1811; Meru, 1940; Mouy, 2372; Noyon, 5946; Pont-Sainte-Maxence, 2575.

Beauvais, on the Therain, 45 miles N.N.W. of Paris, is an episcopal city of small size, and irregularly built, but the inhabitants are very industrious, and engaged in commerce. The cathedral is one of the largest churches and most beautiful gothic structures in France. Beauvais possesses several other ancient buildings, a college, a royal tapestry manufactory, established in 1664, numerous cloth factories, cotton mills, and other works, which render it one of the principal manufacturing towns in the kingdom. *Compiegne*, on the Oise, is noted for its magnificent royal palace, which was rebuilt by Louis XIV. and Louis XV., and restored after the revolution by Napoleon. Adjoining to the palace is a fine forest. *Noyon*, a small town on the Oise, and formerly a bishop's see, is noted for the industry of its inhabitants, and for a cathedral, equal in beauty to the church of St. Germain l'Auxerrois at Paris. Noyon was the birthplace of the great reformer John Calvin. *Senlis* is a small town on the Nennette, noted for the forest with which it is surrounded, and for its vast gothic cathedral, a building of great antiquity and elegant architecture. *Mortefontaine*, a small village with a chateau, is reckoned one of the finest in the neighbourhood of Paris. *Ermenonville*, a pretty village, is celebrated for the residence and death of J. J. Rousseau. *Chantilly*, in a delightful situation, contains the remains of a chateau built by the family of Bourbon-Condé, with a fine park and its magnificent stables, which are still preserved. *Creil*, on the left bank of the Oise, is celebrated for its fine manufactory of English china, which employs 900 workmen. This small town is situate in the middle of one of the most industrious cantons in the kingdom. Within an extent of eight square leagues there are 179 manufactories, which employ 8000 workmen, the annual produce of whose labour is valued at £640,000. *Clermont*, a very small town on the top of a hill, from which there is a magnificent view, contains a college, a library, and several manufactories. The ancient chateau of Clermont is now the central place of confinement for women condemned, in the neighbouring departments, to more than one year's imprisonment. *Mouy* and *Crevecœur*, small towns noted for their manufacturing industry.

Orne.—Alençon, 14,019; *Argentan*, 6147; *Domfront*, 1873; *Mortagne*, 5158; Athis, 4300; Bellême, 3413; Ceton, 3775; Flers, 4386; La Ferté-Mace, 4613; Laigle, 5412; Longin, 2840; †Secz, 5049; Tinchebray, 3413; Le Pin, Vimoutiers, Sainte Honorine, the Baths of Bagnolles.

Alençon, on the Sarthe, a town of moderate extent, has several manufactures of various kinds, and carries on a considerable trade in grain, cider, cloth, feathers, horses, and fat cattle. *Secz*, on the

Orne, is a small episcopal city with a college, and a fine gothic cathedral finished in 1126. *Argentan* is a small town, with a college. *Le Pin*, near Argentan, a small village, with a superb royal stud, one of the finest establishments of the kind in Europe. *Sainte-Honorine-la-Guillaume* is noted for its granite quarries, which employ the most of its inhabitants. *Vimoutiers*, a small manufacturing town. *Laigle* is known for its manufactures of pins, needles, hooks and clasps, curtain rings, &c. which employ about 8000 people.

Pas de Calais.—ARRAS, 23,419; *Bethune*, 6889; *Boulogne-sur-Mer*, 20,856; *Montreuil*, 4083; *Saint Omer*, 19,344; *Saint Pol*, 3501; Aire, 8725; Ardres, 2016; Arques, 2190; Audruick, 2287; Auxy-le-Chateau, 2725; Bapaume, 3195; Beaumetz, 1524; Berck, 1649; Bourlon, 1503; Bucquoy, 1561; Calais, 10,437; Carvin-Epinoy, 4995; Courrieres, 2760; Dèvres, 2621; Ecourt-St.-Quentin, 2033; Epericcques, 1837; Etaples, 1764; Frevent, 2671; Fruges, 3038; Gonnehem, 1878; Guines, 3859; Harnes, 2186; Henin-Lietard, 3006; Hermies, 2201; Hesdin, 3425; Lens, 2551; Lillers, 4621; Marquise, 2037; Metz-en-Couture, 1592; Oisy, 2148; Outreau, 3600; Oye, 1510; St. Pierre-les-Calais, 6802; Vaulx, 1715; Vitry, 2310; Zutkerque, 1862; Azincourt or Agincourt.

ARRAS, formerly the capital of Artois, on the river Scarpe, 102 miles N. by E. of Paris, is reckoned one of the finest cities of France, and its citadel, built by Vauban, renders it one of the most important fortresses in the kingdom. The houses are built of hewn stone. The town contains a gothic cathedral and town-house, spacious barracks, a college, and several other literary and scientific institutions; while its manufacturing industry and extensive trade render it at once flourishing and wealthy. *Calais* is a fortified town, on the Strait of Dover, and one of the most celebrated places in the history of France. It is the principal station of the packets between England and France, and the centre of a considerable manufacture of cotton cloth, which employs between 7000 and 8000 people. In the immediate neighbourhood is *St. Pierre*, famous for its manufacture of metal buttons, files, sugar, and other articles. *St. Omer*, upon the Aa, is a small but strong town, with a large and beautiful cathedral, a college, and other literary and scientific establishments. *Bethune*, a small town, with strong fortifications, and a college. *St. Pol* and *Montreuil*, chief towns of arrondissements, are picturesquely situate upon two small rivers. *Boulogne*, an important seaport on the Channel, is divided into the upper and the lower towns; the latter built with great regularity, and possessing a magnificent sea-bathing establishment, equal to anything of the kind that England can boast of. The inhabitants are largely engaged in the herring, mackerel, and cod fisheries; and the packet boats which ply regularly to and from England add much to the bustle of the town. Boulogne contains a royal school of navigation, a royal school of design, a library, a picture gallery, a museum, and other scientific and literary institutions. It is a great resort of the English absentees and idlers. In the immediate neighbourhood is a fine marble pillar erected in honour of Napoleon, by the army assembled for the invasion of England in 1804-5. There are also marble quarries, and very rich coal mines. At some distance is *Courset*, a village remarkable for its botanic gardens. *Agincourt*, between St. Pol and Montreuil, well known for the victory gained by Henry V. of England over the French in 1415.

Puy de Dome. —†CLERMONT FERRAND, 28,257; *Ambert*, 7650; *Issoire*, 5990; *Riom*, 12,379; *Thiers*, 9836; Aiqueperse, 3217; Arlanc, 3567; Aubiere, 3513; Augerolles, 3522; Beaumont, 1858; Billom, 4746; Bromont, 3091; Cebazat, 2583; Celles, 1442; Cournon, 2684; Cunlhaut, 3470; Domaise, 1637; Gerzat, 2498; Job, 3253; Jumeaux, 1826; Lempdes, 1883 Lezoux, 3447; Maringues, 4181; Marsac, 3206; Martres-de-Veyre, 3026; Meissex, 1880; Pont-du-Chateaux, 3429; Saint Antheme, 3286; Saint Germain Lembron, 1983; Saint Remy, 3915; Sugeres, 1691; Vertaizon, 2735; Veyne, 3262; Vic-le-Comte, 3153; Vallore (ville), 3881; Volvic, 3032.

Clermont-Ferrand occupies a picturesque situation on the top of a hill, surrounded by a volcanic region of the most varied aspect. The inhabitants are very industrious, and the town is the centre of a great inland trade. It has also an ancient and elegant cathedral. In one of the suburbs of Clermont is the incrusting well of *Saint Allyre*, a ferruginous spring, of the most perfect transparency. The water, which is made to fall upon birds-nests, bunches of flowers, grapes, and other vegetable objects, covers them with a calcareous sediment so fine as not to injure their forms, and gives them the appearance of petrifaction. It has formed in the course of 700 years, by its successive deposits, a natural bridge, and a bank of 230 feet. In the neighbourhood of *Chamalieres*, a small town, with an ancient church and bituminous springs, are granitic mountains supporting two enormous streams of lava, with scoriæ, exhalations of carbonic acid, and a thermal spring, called Cæsar's. *Riom* is a considerable town, the seat of a Royal Court, with considerable manufactures and trade, and situate in the midst of a country of extreme beauty. *Issoire* contains a church remarkable for its antiquity and mosaic ornaments. At *Volvic*, a small town, with a school of architecture and sculpture, a great number of workmen are employed in digging lava for the Paris market. At *Auzat*, near Issoire, mines of antimony have been wrought since 1821; and at *La Combelle* is a great glass-work, which supplies annually more than a million of bottles of every colour. *Besse*, upon the Couze, 3657 feet above the level of the sea, is remarkable for natural curiosities; as the *Cascades-des-Entraigues*, basaltic columns of Malevoisiere; the lake Pavin; the cascade of the Dogne; the Puy de Lancy, the highest mountain of central France, &c.

Pyrenees-Basses. —PAU, 11,285; †*Bayonne*, 14,773; *Maueon*, 1054; *Oleron*, 6458; *Orthes*, 7121; Arudy, 1863; Gan, 3027; Hasparren, 5357; Monein, 5028; Nay, 3290; Pontacq, 3109; Saint-Etienne-de-Baigoray, 3463; Saint-Jean-de-Luz, 2860; Sainte-Marie, 3371; Salies, 8420; Urrugne, 3067.

Pau, the ancient capital of Bearne, the birth-place of King Henri le Grand of France, and of Charles John Bernadotte, King of Sweden, an industrious and trading town, 60 miles east of Bayonne. *Bayonne*, at the mouth of the Adour, a fortified town of the first class, is divided by the Adour and the Nive into three parts, named Big Bayonne, Little Bayonne, and the Faubourg Saint Esprit (Holy-Ghost-suburb.) The streets are wide and well laid out, and *places* adorned with fine buildings, give the town an agreeable appearance. It possesses a considerable trade, but the bar at the river mouth is very dangerous for ships. That well-known weapon, the bayonet, was invented in this town, from which it takes its name. *Saint Jean de Luz* and *Cibourœ* are now small towns, but are noted as the first ports that engaged in the whale fishery, in which, at one period, they employed as many as from 9000 to 10,000 fishers. St. Jean possesses a royal school of navigation. At *Cambo*, a large village on the coast, is a fine bathing establishment.

Pyrenees-Hautes. —†TARBES, 9706; *Argeles*, 878; *Bagneres*, 7586; Bize-Nistos. 3191; Borderes, 1773; Campan, 4171; Lourdes, 3818; Luz, 2357; Maulbourguet, 1725; Ossun, 3243, Paint Pe, 2754; Vic Bigorre, 3679.

Tarbes, on the right bank of the Adour, is a large town, but chiefly remarkable for a royal stud, and the large stables belonging to it. The *Bagneres de Bigorre* are remarkable for the abundance of their thermal waters, and the luxury of their marbles. They are said to be visited every year by 16,000 strangers, who spend about 1,500,000 francs in the place, which is one of the prettiest and best kept towns in France. Mineral waters are also found at *Barreges*, *St. Sauveur*, and *Cauterets*, all in this department.

Pyrenees-Orientales. —†PERPIGNAN, 17,114 *Ceret*, 3251; *Prades*, 2836; Arles, 2166; Baixas, 1840;

Banyuls-sur-Mer, 1608; Collioure, 3272; Elne, 2093; Estagel, 2003; Ille, 3102; Millas, 1970; Port Vendres, 2100; Prats de Mollo, 3484; Rivesaltes, 3208; Saint Laurent, 3207; Saint Paul, 1743; Thuir, 2197; Vinça, 2004.

Perpignan, formerly the capital of Roussillon, is a small fortified city on the right bank of the river Thet. Its inhabitants are industrious, and are engaged in commerce. *Port Vendres* is a very small but well built commercial town, with a fine harbour. At *Ceret*, on the Tech, is a bridge of prodigious height, consisting of a single arch of 140 feet span. *Mont Louis*, on the right bank of the Thet, a very small fortified town, is the highest town in France above the level of the sea, and one of the highest in Europe.

Rhin Bas (Lower Rhine). — †STRASBOURG, 49,712; *Saverne*, 5106; *Selestat*, 9646; *Wissembourg*, 6097; Barr, 4514; Beinheim, 1545; Benfeld, 2230; Bischeim, 2347; Bischoffsheim, 1678; Bischwiller, 5927; Bouxwiller, 3756; Brumath, 4062; Chatenois, 3867; Dambach, 3507; Detwiller, 2294; Dorlisheim, 1811; Erstein, 3613; Geispolsheim, 2216; Grendelbruch, 1544; Haguenau, 9697; Hatten, 2028; Herbitzheim, 1810; Herrlisheim, 2122; Hilsenheim, 1634; Hochfelden, 2253; Hœrdt, 1502; Ingwiller, 2071; Lauterbourg, 2649; Lembach, 1976; Marckolsheim, 2344; Marlenheim, 1962; Marmoutier, 2735; Meistratzheim, 1691; Molsheim, 3225; Muttersholtz, 1944; Mulzig, 3551; Niederbronn, 2467; Niederlauterbach, 1701; Oberbronn, 1635; Obernay, 4795; Oberseebach, 1814; Reichshoffen, 2661; Rosheim, 3772; Salmbach, 1614; Sarre-Union, 3531; Scherwiller, 2631; Schiltigheim, 2627; Schleithall, 2263; Seltz, 2265; Jouffelnheim, 2982; Soultz-sous-Forêts, 1968; Sourbourg, 2217; Le Wantzenau, 2400; Wasselonne, 4191; Westhoffen, 2363; Weyersheim, 2125.

Strasbourg, 250 miles E. of Paris, formerly a free imperial city of Germany, and afterwards the capital of Alsace, is a fine and very strongly fortified city, occupying an agreeable situation on the Ill, not far from its confluence with the Rhine. It stands in the midst of a plain as remarkable for its flourishing agriculture and numerous fine country houses, as for the great number of industrial establishments of every kind, which bear witness to the activity of its inhabitants. It contains a number of fine public buildings, of which the principal is the cathedral, one of the finest gothic churches in existence, adorned with a very high tower and steeple, and having a clock which represents the movements of the solar system. The steeple is 466 feet high, and the ascent to the top is made by 726 steps.* The communication with Germany is formed by a bridge of boats, which takes its name from the village of Khel, on the right bank of the Rhine.

Rhin Haut (Upper Rhine.) — COLMAR, 15,442; *Altkirch*, 2819; *Belfort* or *Befort*, 5753; Ammerschwihr, 2137; Bergheim, 3518; Biesheim, 1767; Blotzheim, 2287; Cernay, 3416; Dornach, 1634; Egnisheim, 2183; Ensisheim, 2568; Giromagny, 2166; Gueberschwihr, 1635; Guebwiller, 3637; Habsheim, 1546; Hegenheim, 1902; Ingersheim, 1995; Kayersberg, 3053; Liepvre, 1893; Massevaux, 3053; Mulhausen, 13,300; Munster, 4340; Neuf-Brisach, 2005; Oberhergheim, 1559; Orbey, 4926; Pfaffenheim, 1842; Reguisheim, 1878; Ribeauville, 6558; Riquewihr, 1931; Rixheim, 2941; Rouffach, 3979; Saint Amarin, 1995; Sainte Croix-aux-Mines, 3262; Sainte Croix-en-Plaine, 1729; Saint Hippolyte, 2114; Sainte Marie-aux-Mines, 9961; Soultz, 4016; Soultzmatt, 3139; Thann, 3937; Turckheim, 2736; Uffholtz, 1833; Wattwiller, 1788; Willer, 2085; Wintzenheim, 3245.

Colmar, situate upon the rivulet Lauch, and an arm of the canal de la Fecht, an affluent of the Ill, is a small town with a flourishing commerce, and the fifth in rank among the towns noted for their cotton manufactures. *Mulhausen*, 160 miles S.S.W. of Strasbourg, is a manufacturing town, which is rapidly encreasing, and is said to number already 25,000 inhabitants, though the census makes it only 13,000. The principal articles of manufacture are printed cottons and silks, remarkable for the fineness of their colours, and the beauty of the designs. So many as 60,000 people are said to be employed in the town and neighbourhood, the yearly produce of whose labours is estimated at 50,000,000 francs, or more than £2,000,000 sterling. *Huninguen*, on the Rhine, near Basel, was a regular fortress constructed by Vauban; but the fortifications were destroyed by the Austrians in 1815, and the place has now become a mere village. *Neuf-Brisach* and *Belfort* are also fortified towns; and *Sainte Marie-aux-Mines*, is noted for the rich metallic veins which surround it, but of which only one is worked; and for its cotton manufactures, tanneries, red-dyeworks, &c.

Rhone. — ††LYON, 133,715; *Villefranche*, 6460; Amplepuis, 4873; Beaujeu, 1596; Caluire-et-Cuire, 4000; Condrieu, 3864; Cours, 3311; Givors, 4884; La Croix-Rousse, 9213; La Guillotiere, 18,294; Millery, 1525; St. Cyr-au-Mont-d'Or, 1863; Tarare, 6833; Vaise, 4237.

Lyon, 250 miles S.S.E. of Paris, the second city of France, is situate at the confluence of the Rhone and the Saone. Few cities occupy a more favourable situation, but though mostly rebuilt since the revolution, it contains scarcely any buildings worthy of notice. The quays, however, and the numerous bridges thrown across the two rivers are striking objects. The most remarkable buildings are the Saracenic cathedral, the town-house, and the hospital called *Hotel de Dieu*. There is an establishment for education of great repute, consisting of a primary and a secondary school, with the finest provincial library in France, consisting of about 120,000 volumes. Connected with these, are also a museum, an observatory, a botanical garden, and a veterinary school. The chief employment of its population consists in the manufacturing of silk goods, velvets, satins, and other varieties of the same elegant article. There are also manufacturers of cotton, woollen, and leather goods, goldlace, jewellery, paper, perfumery, and a variety of chemical preparations. The annual produce of the silk manufacture alone is valued at 100,000,000 francs, or more than £4,000,000 sterling. The number of weavers employed in the ribband manufactory, within the arrondissement of Lyon, in January 1840, amounted to 27,500 of both sexes; the number of looms to 24,775; and it was estimated that 350,000 ells were woven daily. Lyon is a place of great antiquity, its foundation being dated 220, or, according to others, about 40 years B.C. Under the Latinized Celtic name of *Lugdunum*, it became the capital of Celtic Gaul, and has experienced numerous vicissitudes and misfortunes; the last of which was a siege of 40 days, which it sustained against the republican forces in 1793. On this occasion its inhabitants were decimated; its workshops abandoned, and its monuments destroyed. In 1831 also, and 1832, it was the scene of bloody insurrections, which were put down by cannon shot. The annual revenue of the city amounts to £120,000. *La Guillotiere*, and *La Croix Rousse*, are two suburbs of Lyon, entirely detached by the rivers, but connected with it by bridges. Including these, the population of the city and suburbs, in 1836, amounted to 150,814.

Saone Haute. — VESOUL, 5583; *Gray*, 5937; *Lure*, 2847; Champagney, 3129; Champlitte-et-le-Prelot, 3835; Fougerolles, 5790; Gy, 2848; Hericourt, 2907; Jussey, 2705; Luxeuil, 3570; Pêmes, 1582; Port-sur-Saone, 2067; Saint-Loup, 2663; Servance, 4922.

Saone et Loire. — MACON, 10,998; † *Autun*, 9921; *Chalons-sur-Saone*, 12,220; *Charoles*, 2984; *Louhans*, 3411; Anost, 3004; Buxy, 1954; Chagny, 2989; Chauffailles, 3292; Cluny, 4152; Cuiseaux, 1753; Cuisery, 1732; Demigny, 1659; Digoin, 2900; Fontaines, 1503; Gergy, 1781; Givry, 2882; Le Creusot, 3117; Marcigny, 2620; Ouroux, 2143; Paray-le-Monial, 3100; Pierre, 1838; Rully, 1600; St.

* Some years ago, a girl who had gone up with other visitors, got into such an ecstasy that she leapt from the top, and was dashed to pieces on the roof of the church.

Leger-sur-Dheune, 1597; St. Martin-en-Bresse, 1568; St. Vallier, 1767; Semcey-le-Grand, 2406; Tournus, 5311; Varennes-le-Grand, 1519; Verdun-sur-Saone, 1796.

Macon is a small city on the right bank of the Saone, the centre of the wine trade of the Chalonaise side, (côte Chalonalse), is a place of great antiquity, and contains several ruins, among which are a temple of Janus and a triumphal arch. *Autun*, the *Bibracté* of Julius Cæsar, and afterwards called *Augustodunum*, in honour of his successor, is a small episcopal city on the river Arroux. Two triumphal arches, numerous ruins of temples and amphitheatres, and the extent of its ancient walls still bear testimony to its importance in the times of the Roman empire. It is chiefly noted in modern times as the see of the notorious Prince Talleyrand, who was Bishop of Autun at the commencement of the French revolution. *Chalons-sur-Saone*, is a flourishing commercial town at the termination of the Canal du Centre.

Sarthe.—†LE MANS, 19,792: *La Fleche*, 6427: Mamers, 5822; *Saint Calais*, 3638; Ballon, 4078; Beaumont-sur-Sarthe, 2381; Bonnetable, 5803: Chateau-du-Loir, 3056; Ecommoy, 3499; La Ferte-Bernard, 2535; Frênay, 2840; Le Lude, 3250: Mayet, 3519; Nogent-le-Bernard, 3020; Parigné-l'Eveque, 3189; Sablé, 3999; Sillé-le-Guillaume, 2696; Vibraye, 3037.

Le Mans, upon the Sarthe, formerly the capital of Maine, is a large town, the centre of a considerable trade in grain, luzerne, trefoil, wine, brandy, and poultry, and is also noted for its bleaching works of cloth and wax. *La Fleche*, 23 miles S.S.W. of Le Mans, is a small town celebrated for its college, founded by Henry IV. which has been converted into a preparatory military school, where 600 pupils, 400 of whom are maintained at the public expense, receive instruction before entering the school of Saint Cyr.

Seine.—††PARIS; *Saint Denis*, 9686; *Sceaux*, 1529; Arcueil, 1816; Aubervilliers, 2240; Auteuil, 2764; Les-Batignolles-Monceaux, 6850; Belleville, 8179: Bercy, 3939; Boulogne, 5391; La Chapelle, 2472; Charenton-le-Pont, 1991; Choisy-le-Roi, 3075; Clichy-la-Garenne, 3109; Colombes, 1649; Conrbvoies, 1934; Gentilly, 8616; Grenelle, 1647; Montmarte, 4630; Montreuil-sous-Bois, 3338; Mont Rouge, 3847; Nanterre, 2511; Neuilly, 5602: Pantin, 1881; Passy; 4545; Puteaux, 2026; Vanvres, 2416; Vangirard, 6695; La Villette, 4999; Vincennes, 2881; Vitry, 2197.

Paris, (see *anté.*) *Saint Denis* (*Sang Dnee*), a neat little trading town on the right bank of the Seine, below Paris, is chiefly remarkable for its ancient church, a gothic structure of great lightness, the burial-place of the kings of France, whose tombs were all destroyed during the heat of the Revolution. Within the buildings of the ancient abbey, a royal instruction house has been established for 500 daughters of the chevaliers of the Legion of Honour, 400 of whom are supported by Government. There are, besides, several boarding-schools, magnificent nurseries, two artesian wells, a fine barrack, and numerous industrial establishments, the machinery of which is driven by the waters of the Crou. The principal of these are 12 extensive corn-mills, of ingenious mechanism. *Boulogne*, on the Seine, to the westward of Paris, is the rendezvous of the walkers of the capital, and its wood (*Bois de Boulogne*) is the arena of the Parisian duellists. *St. Ouen*, on the Seine, above St. Denis, contains several manufacturing establishments, an artesian well, a new port, with large basins and quays, and a fine chateau, from which Louis XVIII. dated the preliminary declaration of the *Charte*. *Montmarte*, situate on an eminence to the north of Paris, is one of the most important points of defence to the capital. *Neuilly*, on the Seine, N.W. of Paris, has a fine bridge across the river, and a castle, the private property of the reigning King, one of the most agreeable country houses in the vicinity of the capital. *Sceaux*, 4 miles S., is a small town, with a famous cattle market, and a castle and park, constructed by Colbert, where country balls are given every holiday during summer. *Bicetre*,* a mile and a half south, where there is a vast castle, with an hospital capable of containing from 4000 to 5000 lunatics and old people, and a prison for 2000 convicts, mostly destined for the bagnes at the military ports. *Vincennes*, on the east of the city, is a small town in a large park, with an ancient castle, inhabited by the kings of France from Louis VII. to Louis XIII. The fortifications which have been erected since 1830, render it a place of some importance; and its ancient donjon is celebrated as a state prison. A granite pillar and a weeping willow placed in the ditch mark the place where the Due d'Enghien was shot in 1804.

Seine et Marne.—MELUN, 6922; *Coulommiers*, 3335; *Fontainebleau*, 8132; †*Meaux*, 8537; *Provins*, 5665; Bray, 1992; Brie-Comte-Robert, 2752; Dammartin, 1712; La Ferté-Gaucher, 1930; La Ferte-sous-Jouarre, 3927; Lagny, 1869; Montereau, 4153; Moret, 1673; Nangis, 1963; Nemours, 3839; Quincy, 2092; Tournan, 1827.

Melun, on the Seine, is a small town, 26 miles S.E. of Paris, pleasantly situate at the base of a hill, and divided by the river into three parts. About a league distant is *Vaux-les-Praslin*, the magnificent chateau of Fouquet, the friend and protector of Moliere, Fontaine, and Pelisson. *Fontainebleau* is a small town 35 miles S.E. of Paris, celebrated for its forest, and the royal palace, built at different periods, but chiefly by Francis I., and lately repaired by Louis Philippe. The magnificent forest, in the midst of which the palace is situate, is covered with enormous blocks of stone, which are used for paving the streets of Paris. *Meaux*, 30 miles N.E. of Paris, is a small well built episcopal city, situate on the Marne and the canal de l'Ourcq, and possesses a fine gothic cathedral. It is also the centre of a great corn trade for the supply of Paris, and furnishes annually more than 2954 tons of cheese called *Brie*. *La Ferté-sous-Jouarre* is a small town, famous for its manufacture of cards (for woolcombing, &c.) and the great number of millstones which it exports.

Seine et Oise.—†Versailles, 28,477; *Corbeil*, 3708: *Etampes*, 8109; *Mantes*, 4148; *Pontoise*, 5458; *Rambouillet*, 3147; Argenteuil, 4542; Arpajon, 2165; Beaumont-sur-Oise, 1892; Chevreuse, 1507: Conflans-Sainte-Honorine, 1634: Dourdan, 2555; Essonne, 2717; Gonesse, 2147; Houdau, 1839; Longjumeau, 2308: Meudon, 3026; Meulan, 1850; Milly, 1941; Montfort-l'Amaury, 1817; Montlhery, 1566; Montmorency, 1789; Poissy, 2850; Prêles, 1541; Rucl, 3417; Saint Cloud, 1935: St. Germain-en-Laye, 10,671; Sannois, 1622; Sarcelles, 1615; Sartrouville; 1874; Sevres, 3975.

Versailles, 12 miles W. by S. of Paris, an episcopal city, and the capital of the department, was built by Louis XIV. in 1672, and is said, at one time to have contained so many as 80,000 inhabitants; the number, however, is now reduced to 30,000. Its superb palace was the ordinary residence of the kings of France, from 1672 to 1790, and was reckoned one of the most magnificent royal residences in the world. It is adorned with all the graces of architecture, fine paintings, sculptures, and gilding; and surrounded with a park of 360 acres (384,000 square toises) which is divided in the middle by a canal, and having in many places other basins and waterworks, which throw their streams higher than the tallest trees. The water was formerly supplied from the Seine, at Marly, by means of a curiously constructed machine, which is now superseded by a steam-engine. At the extremity of the park are the *Great* and the *Little Trianon*; the former was built by Louis XIV., and realizes by its magnificence the brilliant fictions of Tasso, in his description of the palace of Armida; and the latter built by Louis XV., and embellished by the Queen Marie Antoinette, is remarkable for its fine English garden, where art is concealed under the appearance of nature. An historical museum was begun

* *Bicetre* is merely a corruption of the English word *Winchester*; the bishop of which see had his residence here during the times of the Henry V. and Henry VI.

in the palace in 1833, which is destined to receive all the pictures, portraits, busts, and sculptural groups, which might serve to perpetuate the remembrance of the persons and events most celebrated in the history of France. Some idea of the magnificence of this palace may be formed from the fact that the total number of galleries and rooms occupied by works of art and curiosity is 151, through which are dispersed no fewer than 5000 pictures. The largest of these rooms, the *Grand gallerie des batailles*, is about 400 feet long and 40 wide, and contains, on 33 large pannels the representation of 33 battles, from that of Talbiac, A. D. 496, to that of Wagram, in 1809. In the environs of Versailles are delightful walks, and neat villages, with industrial establishments of every kind. Among these are — *Saint Cyr*, containing a special military school for 300 pupils, established in the vast buildings of the royal abbey, which was founded by Madame de Maintenon; *Grignon*; *Jouy*; *Argenteuil*, on the right bank of the Seine, is celebrated for its vineyards, and contains some remains of the abbey, of which the celebrated Heloise was superior.

Corbeil and *Mantes*, on the Seine, and *Pontoise*, on the Oise, are small trading towns. In the neighbourhood of the last is *Athis*, where is an extensive manufactory of iron and steel plates, founded in 1824, and wrought by Englishmen. *Etampes*, a small town, with a college and agricultural society, which derives importance from its frequent communications with Paris. In its neighbourhood is situate *Mereville*, an important emporium for the agricultural produce destined for the supply of the metropolis, and containing also a fine property called the *Folie Mereville*, with a large chateau and magnificent gardens. *Meudon*, a fine town, situate on a high bank, contains a royal chateau, with a beautiful terrace; and, at Lower Meudon, is a considerable glasswork, called the Sevres glasswork. *Sevres*, a small town on the left bank of the Seine, is celebrated throughout Europe for its royal porcelain manufactory, the finest of the kind in the world. *St. Cloud*, a pretty town, situate on the slope of a hill, on the left bank of the Seine, was founded by Clodoald, the grandson of Clovis, and contains a fine chateau, the favourite residence of the Emperor Napoleon, by whom it was restored and sumptuously furnished. It now forms the ordinary summer residence of the King of the French. The fair of St. Cloud is one of the best attended in the neighbourhood of Paris. *Marly*, on the Seine, is chiefly remarkable for the remains of the celebrated machine constructed by Louis XIV. for the supply of his waterworks at Versailles, which raised the water to an elevation of 600 feet. It is now superseded, as already stated, by a steam-engine. Near Marly is *Malmaison*, once the charming country-house of the Empress Josephine. *St. Germain-en-Laye*, on the left bank of the Seine, is famous for an ancient castle and a terrace, 1200 toises (7673 feet) in length, and 15 feet in breadth, from which there is one of the finest views in the neighbourhood of Paris. It now communicates with Paris by a railway, and with Rouen and Le Havre by steam-boats on the Seine, and may therefore be called the river port of Paris. *Poissy*, on the left bank of the Seine, has a large cattle market, the customs of which produce to the city revenues of Paris an annual income of £56,000. The ancient convent of the Ursulines has been converted into a depot for beggars, of whom it is large enough to contain 750. *Rambouillet*, a small town, possesses some historical interest, and contains a royal palace, surrounded by an extensive forest. The park, which is laid out in the English style, is remarkable for the fine points of view which it presents, and for its limpid waters; and particularly for a magnificent dairy, the interior of which is fitted up with white marble elegantly sculptured, and kept cool by jets of water. It is to the royal farm established here by Louis XVI., with the view of naturalizing merinos in France, that the improvement of the sheep throughout the kingdom is principally to be ascribed. *Rosny*, a small village on the left bank of the Seine, was the birth-place of the celebrated Duke of Sully, the minister of Henry IV. *Montmorency*, a very small town, situate in a beautiful and delightful valley, is the rendezvons of the Parisian equestrians. *Enghien* is a large village, consisting of elegant houses, lately built for the accommodation of the numerous visitors of its sulphureous baths. *Iris*, a village between Paris and Corbeil, is remarkable for the royal horticultural institute of Fromont, belonging to M. Soulange Bodin, a magnificent garden, from which the first French Horticultural Society derived its origin. It contains a complete collection of exotic plants from all parts of the world.

Seine Inferieure.—††ROUEN, 88,086; *Dieppe*, 16,016; *Le Havre*, 21,049; *Neufchatel*, 3430; *Yvetot*, 9021; Aumale, 1980; Bacqueville, 2685; Bolbec, 9630; Caudebec, 2832: Caudebec-les-Elbeuf, 3930; Darnetal, 5572; Deville-les-Rouen, 3185; Doudeville, 3172; Elbeuf, 10,258; Eu, 3543; Fecamp, 9123; Gournay, 3030: Ingouville, 5666; Maromme, 2411; Montevilliers, 3828: Oissel, 3313; Saint Nicolas d'Aliermont, 1805; Saint Saëns, 2330; Saint Valery-en-Caux, 5328; Sotteville sur Mer, 1551; Sotteville les Rouen, 3912; Treport, 2267; Veules, 1530.

Rouen, formerly the capital of Normandy, is situate on the Seine, 73 miles N.W. of Paris. It is a large and populous city, but irregularly built; the houses are chiefly of wood, and the streets crooked; but its port, with an ingenious drawbridge, the quays, public wells, walks, halls, and numberless manufactures, give it a distinguished place among the most industrious cities of Europe. Its cathedral is a building of great antiquity, and has an imposing appearance. The spire, which was formed of wood, and covered with lead, was destroyed by lightning in 1822, and has been replaced by one of cast-iron, weighing above a million of pounds. Rouen contains a number of educational and other public institutions and societies; and has a magnificent stone bridge across the Seine. The manufacturing industry of Rouen extends to a circuit of 30 miles radius, within which are numerous towns and villages, whose inhabitants are engaged in the manufacture of cotton goods, and a thousand other articles. Most of these places have doubled, and some of them even tripled their population, within the last 20 years. *Bolbec*, in particular, which was lately a poor and insignificant town, now contains more than 9000 industrious and wealthy inhabitants. *Deville*, *Caudebec-les-Elbeuf*, *St. Aubin Epernay*, *Caudebec* and *Lillebonne*, may also be mentioned; *Neufchatel* also, noted for cheese, and *Gournay* for its butter and its mineral waters. *Lillebonne* has acquired great celebrity among antiquarians in consequence of the discovery of an ancient theatre, and baths, bronze and marble statues, medals, inscriptions, and other remains of the Roman *Julia Bona*.

Le Havre de Grace, now commonly called simply *Havre*, is a scaport on the right bank of the Seine, near its month, where the river is about 3 miles wide, and is one of the principal commercial towns in the kingdom. It is strongly fortified both on the land and sea sides, and contains a citadel, a naval arsenal, where frigates and corvettes are built, and a marine school. Havre is the port of Paris, and its harbour is generally crowded with vessels from the French colonies, and the United States of America, with which it maintains a constant communication. It also takes the lead in the whale fishery, having had, in 1837, so many as 35 ships, of 19,430 tons burden engaged in it, while the other ports of the kingdom furnished only 9 ships. The town is well built, with streets crossing each other at right angles, and has been very much improved of late years. Near Havre are — *Ingouville*, a suburb, containing delightful country houses; *Montivilliers*, a small town, with a college, in a very pleasant situation, much frequented by strangers; and *Harfleur*, a very small sea-port town on the Seine. *Elbeuf*, an ancient city, on the left side of the Seine, celebrated for its cloth manufactures. The establishment of these is referred to a very remote period, and they now employ more than two thirds of the entire population of the city; and about 2000 people in the neighbouring villages. The town is ill built, and the streets ill paved. In the neighbourhood are *Caudebec-les-Elbeuf*, and *Maromme*, the seats of important manufacturing industry. *Dieppe*, on the coast of the Lower Seine, 100 miles N.W. of Paris, is a well built and thriving sea-port, one of the principal ports on the Channel. Its oyster beds, lace works, ivory works, and fishing apparatus, give employment to several thousand

persons; and its fine sea-water baths attract a considerable number of visitors. Dieppe contains a college, a royal school of navigation, and a lace manufacture school. In its neighbourhood are—*Neufchatel-en-Bray*, *Yvetot*, chief towns of arrondissements; *Eu*, a small town with a college, a royal chateau, with a gallery of historical pictures, a very large beautiful gothic church, and an hospital for the sick. *Treport*, a small seaport; *Saint Valery-en-Caux*, a small town, noted for its harbour, trade, and fisheries; *Fecamp*, a small seaport and fishing town, with considerable trade, and a school of navigation.

Sevres (Deux).—NIORT, 16,175; *Bressuire*, 1344; *Melle*, 2512; *Parthenay*, 4024; Airvault, 1925; Manzé, 1797; La-Mothe-Sainte-Heraye, 2673; Saint-Maixent, 4329; Thouars, 2314.

Niort is a thriving manufacturing and commercial town, situate upon the Niortaise Sevre. *Mauze* has a fine stud for breeding asses, of which it produces several thousands annually; and *Sainte Maixent* has a magnificent depot of stallions.

Somme.—†AMIENS, 45,001; *Abbeville*, 19,162; *Doulens*, 3703; *Montdidier*, 3769; *Peronne*, 3802; Airaines, 1930; Albert, 2668; Beauquene, 2705; Beauval, 2302; Boves, 1568; Candas, 1628; Cayeux, 2549; Combles, 1641; Epehy, 1831; Flesselles, 1718; Flixecourt, 1640; Hallencourt, 1624; Ham, 1663; Harbonnieres, 2117; Longpré, 1605; Marcelcave, 1512; Moislains, 1728; Moreuil, 1941; Naours, 1896; Nèle, 1643; Rosieres, 2349; Roye, 2636; Saint-Saulieu, 1502; St. Valery-sur-Somme, 3265; Talmas, 1928; Toutencourt, 1574; Varloy-Baillon, 2074; Vignacourt, 3790; Villers-Bretonneux, 2163; Cressy.

Amiens, situate on the river Somme, 80 miles N. of Paris, is an ancient fortified city, with a citadel, the seat of a bishop's see, and of a royal court. It contains extensive silk, woollen, and cotton manufactures, and several literary and scientific establishments. The cathedral, which is particularly admired, as a masterpiece of gothic architecture, was finished towards the end of the 13th century. *Abbeville*, also upon the Somme, near the sea, is a considerable town, with important manufactures of cloths and velvets. It has also a college, a library, and a stud. It is strongly fortified, and has a very fine old gothic cathedral. *Escarbotin*, is a small village, the centre of a great trade in locks, which are carried to every part of France. *St. Valery*, is a small trading town, with a school of navigation, and a harbour, where the canal of the Somme terminates. It was from this place that Duke William set sail for the conquest of England in 1066. *Rue* and *Crotoy*, are small towns built on ground which has been gained from the sea. *Doulens*, *Peronne*, and *Montdidier*, are fortified towns. *Ham*, a small town with an ancient castle, used as a state prison for the ministers of Charles X. *Cressy*, 11 miles north of Abbeville, is famous for the victory gained by Edward III. of England over the French in 1348.

Tarn.—††ALBY, 11,665; *Castres*, 16,418; *Gaillac*, 7725; *Lavaur*, 7179; Cordes, 2602; Graulhet, 5097; Lacaune, 3681; Lile, 5065; Mazamet, 7098; Puylaurens, 6160; Rabastens, 6966; Realmont, 2660; Soreze, 2817.

Alby, on the Tarn, is a considerable trading town, with a vast gothic cathedral, adorned with old pictures, possessing one of the finest organs in the kingdom, and having also a very lofty spire. Alby is the centre of a great cloth manufacture. It was from this town that the *Albigenses*, persecuted heretics of the middle ages, took their name. *Castres*, 25 miles S. by E. of Alby, is a thriving manufacturing town; the principal articles of produce being fine and common cloth, and particularly the kind called *Cuir-laine*. In the immediate neighbourhood is the *Rocher tremblant*, a stone of 60,000 lbs. weight, so nicely poised upon a rock, that one man can make it oscillate seven or eight times; and the grotto of Saint Dominique, consisting of long underground galleries, with a large hall at the entrance.

Tarn et Garonne.—†MONTAUBAN, 25,460: *Castel-Sarrasin*, 7092; *Moissac*, 10,165; Auvillars, 2302; Beaumont, 4130; Caussade, 4479; Caylus, 5319; Finhan, 1730; La Française, 3686; Grisolles, 2091; Lauzerte, 3685; La Magistere, 1935; Montaigu, 4172; Realville, 3030; Saint Antonin, 5482; Valence, 2875; Verdun-sur-Garonne, 4234.

Montauban, a large well built town on the right bank of the Tarn, possesses several manufactures; is the seat of the faculty of theology of the Reformed Church; and contains a cathedral remarkable for its great antiquity, which is said to extend back to the year 739.

Var.—DRAGUIGNAN, 9804: *Brignolles*, 5940; *Grasse*, 12,716; *Toulon*, 28,419; Antibes, 5565; Aups, 3983; Bargemont, 1891; Barjols, 3512; Bausset, 3326; Besse, 1750; Cagnes, 2349; Callas, 2268; Cannes, 3894; Carces, 2217; Collobrieres, 1680; Cotignac, 3602; Cuers, 5106; Fayence, 2554; Flayosc, 2606; †Frejus, 2665; Gonfaron, 1596; Hyeres, 10,142; Lorgues, 5444; Le Luc, 3580; Le Muy, 2045; Ollioules, 3132; Pignans, 2380; Pourrieres, 1893; Rians, 2973; Saint Maximin, 3637; Saint Nazaire, 2695; Saint Tropes, 3736; Saint Zacharie, 1729; Salernes, 2510; La Seyne, 6732; Signes, 2182; Sollies-pont, 3493; Tourves, 2728; Le Val, 1752; La-Valette, 2450; Vallauris, 2000; Vence, 3612.

Toulon, on the coast of the department, one of the principal stations of the French royal navy, is a large fortified town, irregularly built at the foot of a hill, and possesses a fine harbour and a roadstead, one of the largest and safest in Europe. The harbour extends about 6 miles inland, is clear of obstruction throughout, with good anchorage in every part of it; but the principal anchoring place is the Little Road, opposite the town, where ships ride in 6 or 7 fathoms water, with a bottom of mud, and are sheltered from all winds. *Grasse* is celebrated for its manufacture of perfumes, essences, and scented soaps, as well as for the beauty of its environs, which have the appearance of a vast English garden. Near it are *Cannes*, a small trading seaport, where Buonaparté landed from Elba, in 1815; *Frejus*, where he landed on his return from Egypt; *Draguignan*, the capital of the department; and *Antibes*, an ancient but decayed city; now a strong fortress of the third class.

Vaucluse.—††AVIGNON, 29,889; *Apt*, 5707; *Carpentras*, 9817; *Orange*, 9123; Bedarrides, 2215; Bollene, 4672; Cadenet, 2595; Caderousse, 3169; Caromb, 2552; Caumont, 1830; Cavaillon, 6911; Courtheson, 3053; L'Ile, 6052; La Palud, 2315; La Tour d'Aigues, 2470; Malaucene, 3069; Maran, 3851; Monteux, 4760; Mormoiron, 2097; Pernes, 4593; Pertuis, 4520; Sorgues, 2518; Valreas, 4348.

Avignon, situate on the left bank of the Rhone, in the middle of a plain embellished with plantations of mulberry trees, and of orchards and meadows, was formerly the capital of a small territory which once belonged to the Pope, and is now a flourishing manufacturing and trading town. It has a wooden bridge across the Rhone, remarkable for its length: and still contains the palace which was inhabited by the Popes from 1303 to 1376, an ancient gothic fabric of great size and extent. *Vaucluse*, a small village, about 20 miles E. of Avignon, is situate in a romantic valley, (*Vallis clausa*, whence *Vaucluse*), and is celebrated for a fountain which springs from a cave of immeasureable depth. Numerous streamlets pour into it, with continual din, and encrease the volume of its waters to such an extent, that the river Sorgue, which it forms, is large and deep enough to float boats even at its issue from the basin, and to drive several paper-mills. In 1809 the academy of Vaucluse erected a fine column here to the memory of Petrarch. *Orange*, also on the left bank of the Rhone, and formerly the capital of a small principality which belonged latterly to a branch of the family of Nassau, (now king of Holland), is an industrious and trading town; but is chiefly remarkable for its Roman antiquities, the principal of which is a theatre, considered to be the finest existing monuments of the kind.

Vendee.—BOURBON-VENDEE, 3904; *Fontenay-le-Comte*, 7504; *Les-Sables-d'Olonne*, 4906; Aizenay, 3303; Challans, 3288; †Luçon, 3786; Noirmoutier, 7011; Poiré-sous-Bourbon, 3724; Saint-Jean-de-Mont, 3809; Beauvoir-sur-Mer; Moric.

Bourbon-Vendee, is a small town, built on an extensive plan, but never completed. It has been called by turns *La-Roche-sur-Yon*, and *Napoleon-ville*. *Fontenay-le-Comte* is the principal town of the department. *Sables-d'Olonne* is a seaport town on the coast, built upon a sandy point which protrudes into the sea, and defended by several forts.

Vienne.—†POITIERS, 23,128; *Châtellerault*, 9437; *Civray*, 2203; Loudun, 5078; *Montmorillon*, 3608; Mirebeau, 2405.

Poitiers, at the confluence of the Boivre and the Clain, was formerly the capital of Poitou, and is one of the most ancient and now also one of the largest cities of France, but is not populous in proportion to its size. It still preserves some remains of antiquity, but of these none are remarkable except the cathedral, which is regarded as one of the finest in France. In the neighbourhood is *Lusignan*, a small town, celebrated for its castle, one of the strongest bulwarks of feudalism.

Vienne (Haute.)—†LIMOGES, 27,070; *Bellac*, 3607; Rochechouart, 3996; *Saint Yrieix*, 6542; Chatean-Ponxit, 3742; Le Dorat, 2237; Eymoutiers, 3436; Magnac-Laval, 3455; Oradour-sur-Vayres, 3058; Saint Junien, 5895; Saint Leonard, 5705.

Limoges, formerly the capital of the Limousin, is built on the slope of a hill washed by the Vienne. Fine walks and several public places, particularly that of Orsay, occupy the top of the hill. The cathedral, a fine gothic edifice, the episcopal palace, and the tower of Saint Martial's church, are the most remarkable buildings. Limoges is noted for its manufactures of spun and woven wool, and porcelain, its horse races, and the produce of its forges.

Vosges.—EPINAL, 9070; *Mirecourt*, 5574; *Neufchateau*, 3524; *Remiremont*, 4688; †*Saint-Die*, 7707; Bruyeres, 2328; Charmes, 2962; Gerardmer, 5701; La Marche, 1625; Liffol-le-Grand, 1656; Ramber-villieres, 4990; Raon-l'Etape, 3244; Senones, 2366; Val-d'Ajol, 5958.

The only place of note in this department is *Domremy*, near Neufchateau, the birth-place of Joanne d'Arc, and where a monument has been erected to her memory.

Yonne.—AUXERRE, 11,439; *Avallon*, 5569; *Joigny*, 5537; ††*Sens*, 9279; *Tonnere*, 4242; Brinon, 2566; Chablis, 2555: Saint Bris, 1948; Saint Fargeau, 2132; Saint Florentin, 2442: Vermanton, 2830; Villeneuve-l'Archevêque, 1991; Villeneuve-la-Guiard, 1794; Villeneuve-le-Roi, 4966.

Auxerre is a very ancient city, and still of considerable importance for its industry and commerce. The village of *Fontenay-en-Puisaye* is famous for a bloody battle fought there in 841 by the children of Louis le Debonnaire, in which about 100,000 Franks fell. At the small town of *Vezelay*, St. Bernard preached the second crusade in the year 1146. *Sens*, the see of an archbishop, situate upon the Yonne, is a small trading and manufacturing town. In its cathedral is a fine monument of the Dauphin and Dauphiness; and its fine glass windows are also worthy of notice. In the town-house is preserved the famous *Office des fous*, a manuscript in folio.

FRENCH COLONIES AND FOREIGN POSSESSIONS.

AMERICA.—The islands of Martinique, Guadaloupe, Mariegalante, Saintes, Deseada or Desirade, eastern part of St. Martin, in the West Indies; St. Pierre and Miquelon, in the Gulf of St. Lawrence; Cayenne and the eastern portion of Guiana, in South America.

AFRICA.—Algiers, Bona and La Calle, in Barbary; Senegal and other territories on the west coast, divided into the two arrondissements of Saint Louis and Goree; the first comprising the island of St. Louis, at the month of the Senegal, the neighbouring islands of Babaghé, Safal, and Ghibar, various establishments and factories upon the river, with part of the sea-coast from Cape Blanco to the bay of Iof; and the second comprehending the island of Goree, near Cape Verd, and the coast from the bay of Iof to the factory of Albreda in Gambia. The island of Bourbon, in the Indian Ocean; and the island of St. Mary, near the eastern coast of Madagascar.

ASIA.—Pondicherry, and the districts of Villenour and Bahour, Karikal and others, on the coast of Coromandel; Yanaon, with its dependencies, and a factory at Masulipatam, on the coast of the Northern Circars; Chandernagore, in Bengal; Mahé, and a factory at Calicut, in Malabar,—all in India.

REPUBLIC OF ANDORRE.

This small territory, formerly a portion of the county of Foix, consists of a valley on the Spanish side of the Pyrenees, which is drained by the Balira, an affluent of the Segre, immediately adjoining the French department of Ariege, and is a sovereign state under the protection of France, and of the Bishop of Urgel. It consists of 144 square geographical miles, has a population of about 15,000 souls, and is governed by a syndic, who presides in the council of the valley, and by two *viguiers*, who administer justice, the one named by the King of the French, and the other by the Bishop of Urgel. The country produces little besides wood and iron, with which the inhabitants purchase corn, and other necessary articles. The capital is *Andorre*, a town of 2000 inhabitants, on the Balira. *Canillo* is a village noted for its iron mines.

SWITZERLAND.

(*Fr.* SUISSE, — *Ger.* SCHWEIZ.)

ASTRONOMICAL POSITION. — Between 45° 60′ and 47° 49′ N. lat.; and 6° and 10° 35′ E. long.

DIMENSIONS.—The greatest length, which is from Vattay in the Canton of Vaud to Martinsbruck in the Grisons, is about 180 geographical, or 208 English miles; greatest breadth, from Chiasso in the canton Tessin to the northern extremity of Schaffhausen, 120 geographical, or 156 English miles. The superficial area is estimated at 11,039 square geographical miles.

BOUNDARIES. — *Western:* — France. *Northern:* — Baden and Wurtemberg. *Eastern:* — the Tyrol. *Southern:* — Austrian and Sardinian Lombardy, and the duchy of Savoy.

GENERAL ASPECT.—Switzerland is a very high country, furrowed and intersected by mountains, the greater part of which are ramifications of the Alps, while the remainder belong to the chain of Jura. The centre of the Alpine system is Mont St. Gothard. From this point two ranges extend in a south-westerly direction, forming a mass of the highest mountains of Europe, and including between them the long deep valley of the Valais, which is drained by the Upper Rhone. To the east of St. Gothard, another series of mountain ranges extends eastward through the canton of the Grisons, and forms the watershed between the upper branches of the Rhine, and the Swiss affluents of the Po. From these main ranges, branches stretch in all directions, covering about two-thirds of the surface of the country, and forming numerous valleys, drained by an equal number of mountain torrents, all of which find their way ultimately to the Rhine, the Rhone, the Po, or the Danube. The chain of Jura is entirely separated from the Alps by the lake of Geneva, the valley of the Rhone, and a long narrow plain which stretches to the north-eastward for nearly 180 miles, between the lakes of Constance and Geneva, but separated from them both by ranges of hills and high ground. The width of this plain nowhere exceeds 20 miles, and its elevation varies from about 1250 to 1350 feet above the level of the sea.

The immense masses which constitute the Alps exhibit at first sight the appearance of confusion and disorder, and present on all sides enormous heaps of inaccessible rocks, and everlasting snows. Nevertheless, the intervening valleys contain a considerable extent of country, distinguished alike for fertility and beauty, and forming a singular contrast with the mountains that overshadow and seem ready to overwhelm them. The whole of this alpine country has been divided by naturalists into seven regions, rising successively above each other. The first or lowest region, that of the vine, commences in the valleys, on the banks of the rivers and lakes, and terminates at the height of 1700 feet above the level of the sea. The second, or the region of oaks, reaches the height of 2800 feet, and is succeeded by the region of the beech, which rises to 4000 feet. Firs are seldom found higher than 5500 feet; and above that point the trees give place to rich pastures, which rise a thousand feet higher. The higher alpine regions commence at an elevation of 6500 feet, from this point up to the limit of perpetual snow, hardy plants of various kinds are found, except in the hollow places, sheltered from the sun, where the snow remains throughout the year. Above 8000 feet is the region of glaciers, and everlasting snow. But these regions are greatly modified by circumstances, particularly by the depth of the valleys; the deeper they are, the more intense the cold on the summits of the surrounding mountains; and by exposure to the warm south winds, which have a very perceptible influence on the vegetation of some parts of Switzerland.

The *glaciers*, or *gletchers*, as they are called in German Switzerland, or *waders*, in the Grisons, are among the most remarkable objects in the Alps. They have been formed exclusively in the highest valleys; and are to be found chiefly in those which lie in the direction of east and west, and are surrounded by high mountains, which screen them from the heat of the summer's sun. A glacier, as defined by M. Agassiz, is a mass of ice hanging on the sides of an alpine ridge, or inclosed in one of its valleys, and which is moving continually down the declivity. For nine months of the year snow accumulates in those high regions, and, falling incessantly from the mountains to the bottom of the valleys, collects in enormous beds, several hundred feet in thickness. Such masses cannot entirely melt during the short summer, so

that by the return of winter they have assumed the aspect of a heap of frozen snow, consisting of small grains closely united, and are increased in bulk by the water which filters from the surface into the heart of the mass. The surface and the figure of the glaciers are determined by the nature of the ground on which they rest. In those valleys which have little slope, the glaciers are also level, and have but few clefts. When, however, they rest on a steep slope, or on very uneven ground, their surface is broken into clefts and elevations, in appearance resembling the waves of the sea; and if the slope be greater than the angle of 30° or 40°, the beds of ice break, change place, collect in groups, and assume the most various and fantastic shapes. The clefts or rents are generally several feet wide, and sometimes upwards of 100 feet deep. During winter, the most profound silence reigns among the glaciers; but as soon as the air above them begins to grow warm, and while the summer lasts, dreadful sounds are heard from time to time, attended with tremendous falls and rents, that make the whole mountain quake. Clefts are then formed, which are varied daily, and thus render the passage of the glaciers very dangerous to those who venture upon them. Their extent is likewise varying continually. They sometimes decrease for several consecutive years; at other times they increase, descending farther into the valleys, and covering meadows and cultivated hills. It is commonly in spring that the glaciers increase; and when they have advanced farther than usual into a valley, they are generally seen to diminish again for several years together. Their margins are bounded by dykes of roundish blocks of stone, called *moraines*, which are continually pushed forward or abandoned by the glaciers, as these advance or retire. Along the chain of the Alps, from Mont Blanc to the frontiers of Tyrol, there are reckoned above 400 glaciers, some of which, however, are not more than three miles in length, while, on the contrary, many of them are 18 or 21 miles long, one and a half to two and a quarter miles wide, and from 100 to 600 feet thick. Altogether, the glaciers of Switzerland are supposed to form a sea of ice of more than 1000 square miles in extent; and it is from these inexhaustible reservoirs that the waters of some of the principal rivers of Europe are supplied.

At distances more or less considerable from the existing glaciers, there are found, at different elevations, moraines perfectly similar to those which still encircle their borders. They are equally concentric, and form walls which follow the sinuosities of the sides of the valleys. Everywhere successive stages of them may be discovered, the most elevated of which are some hundred feet above the bottom of the upper valleys of the Alps, where glaciers no longer exist. In descending into the lower valleys they are still met with, at the successive elevations of 1200, 1500, and even 1800 feet; there are also some which are quite distinct, at a height of 2000 feet above the bed of the Rhone, in the neighbourhood of St. Maurice, in the Valais; and they may even be traced to the margin of the lake of Geneva. Some very elevated moraines may be seen above Vevay, and in the environs of Lausanne, which correspond with those on the southern side of the lake. The existence of these ancient moraines, and other circumstances, have given rise to an opinion of the Swiss geologists, that the valleys which contain them, and particularly the great valleys of the Rhone and the Aar, and the lake of Geneva, were formerly occupied by enormous glaciers, to the height of many hundred feet above the present level.

The Alps contain examples of all the different rock formations. The higher, and also many of the deeper ranges and valleys, are composed of primitive rocks, viz. granite, gneiss, mica-slate, clay-slate, limestone, trap, porphyry, serpentine, and quartz. Resting upon these, and frequently at a great height, transition rocks appear, such as greywacké, clayslate, limestone, syenite, trap, and serpentine. The secondary rocks, or those of the third class, although frequently found at a great height, yet more generally occupy lower situations than the primitive and transition rocks. Resting upon the secondary deposits, there are in many places vast accumulations of strata of the tertiary series, consisting of sand, sandstone, and conglomerates, clays, marls, coal, and various limestones, all more or less abounding in organic remains. The bottoms of the valleys, and even their sides to a considerable height, are covered with clay, sand, rolled masses, and other diluvial matter; and over these there everywhere extends a covering of gravel, sand, loam-clay, shell-marl, peat; upon which the common vegetable soil rests, in beds varying in thickness from a few inches to several feet. The secondary and the tertiary rocks are variously intermingled with trap and old volcanic rocks, and the diluvial and alluvial deposits are mixed with newer igneous or volcanic rocks.

The snows accumulated on the tops of the Alps are continually falling down their sloping or precipitous sides into the lower regions, where they often occasion very

serious injury. These falls, called *avalanches* or *lavanges*, consist of large masses of snow, which in their downward course carry along with them fragments of rock, with branches and trunks of trees, and, rapidly increasing in size, sometimes overwhelm and destroy houses and villages, sweep before them whole forests, and even interrupt the course of rivers. Still more serious damage is sometimes occasioned by *landslips*, which fall, like the avalanches, from the sides of the mountains, but consist of masses of earth and rock, torn from the mountain by the expansive power of freezing water, or some other natural cause, and carry ruin and desolation over the slopes of the valleys which lie in their way. One of the most extensive and most remarkable of these took place in the year 1806, when Goldau, and several other villages in the valley of Arth, were overwhelmed by a fall of earth and stones from the Rossberg.—(*See* Schweiz.)

The chain of Jura presents a very different aspect from that of the Alps, being clothed from top to bottom with luxuriant pine forests. It stretches, in several parallel ridges, for about 240 miles along the western and north-western frontiers of Switzerland, from the bends of the Rhone below Geneva, to the banks of the Rhine eastward of Basel, with a breadth varying from 35 to 40 miles. Precipitous and abrupt towards Switzerland, the ridges of Jura become gradually lower on the side of France. They are principally formed of calcareous rock, of a greyish ash or bluish colour, in some places mixed with marble, and containing prodigious quantities of marine remains. No part of them rises to the limit of perpetual snow.

LAKES.—Switzerland is pre-eminently the country of lakes. The principal of them are:—the *Boden see*, or *Lake of Constance*; the *Lac Leman*, *Genfer see*, or *Lake of Geneva*; the *Zurcher see*, or *Lake of Zurich*; the *Vier-waldstatter-see*, or *Lake of the four forest cantons*, called also the *Lake of Lucerne*; the *Wallenstatter see*, or *Lake of Wallenstadt*; the *Brienzer see*, or *Lake of Brienz*; the *Thunner see*, or *Lake of Thun*; the *Neuenburger see*, or *Lake of Neuchatel*; the *Bieler see*, or *Lake of Bienne*; and the Lakes of *Morat*, *Sempach*, *Zug*, *Lowerz Haluyll*, *Baldegg*, *Sarnen*, *Lungern*, *Egeri*, *Greiffen*, *Pfaffikon*; the *Lac-de-Joux*, in Jura; the *Langen see*, or *Lago Maggiore*, and the *Lake of Lugano*, in the canton of Tessin.

The *Lake of Constance*, situate at the north-eastern corner of Switzerland, is formed by the Rhine, and divided into two parts of unequal extent; the upper lake, called the *Ober see*, or *Bregenzer see*, being about 40 miles in length, with a breadth varying from 1½ to 20; the lower lake, or *Unter see*, called also *Zeller see*, and *Ueberlinger see*, being from 10 to 14 miles in length, but of a very irregular figure and various width. The surface is 1246 feet above the level of the Zuider Zee, though some make its elevation to be 1305 feet above the general level of the ocean; and the greatest depth, at a point between Lindau and Mehreran, near the south-eastern extremity, is 2334 feet. The superficial area is estimated at 290 square miles. In picturesque beauty the Lake of Constance is only excelled by that of Geneva; its banks are crowded with castles, smiling towns and villages, in the midst of blooming orchards and vineyards. In the Unter see is the island of Reichenau, covered with vineyards, which produce excellent wine, particularly the Schleitheimer; but the jewel of the lake is the little island of *Meinau*, in the Ober see, 4 miles N. of Constance, recently purchased by Prince Esterhazy, who is converting it into a paradise.

The *Lac Leman*, or *Lake of Geneva*, situate at the opposite, or south-western corner of the country, is formed by the Rhone, and measures in its greatest length about 47 miles, varying in breadth from a few hundred feet at Geneva, to 9 or 10 miles to the westward of Lausanne. Its superficial area is computed to be 336 square miles; its greatest depth is more than 900 feet; its medium depth about 560 feet; and its surface has been variously estimated at 1126, 1134, and 1152 feet above the level of the sea. The water in its greatest increase rises six feet above its ordinary level, and is occasionally subject to phenomena, which the people call *seiches*, and which consist of a sudden rising of the water to the height of five or six feet, in the course of a few hours. The Rhone flows in three branches into the upper end of the lake, which receives, besides, the water of 41 streams. The Leman has been, at all times, reckoned the finest lake of Southern Europe. On the north-east, the east, and the south-east, it is surrounded by high and rugged mountains, but the north-western shore is bounded by lower hills and more gradual slopes, which form a beautiful country of corn fields and vineyards. It seldom freezes, more than to the extent of a few paces from the shore.

Next to these the *Lake of Neuchatel* is the largest, measuring 23 miles in length, and 6 in its greatest breadth. Its surface is 1437 feet above the level of the sea, and its greatest depth is 426 feet; but the height of its level varies at different times more than 7 feet. The *Lakes of Lucerne* and *Zurich* are each about 23 miles long, but very narrow. The former is about 1320 feet above the level of the sea, and its greatest ascertained depth is about 600 feet; the latter is 1279 feet above the level of the sea, and about 600 deep. The upper part of it, above Rapperschwyl, freezes almost every year, but the lower part only when the winter is very severe. The other Swiss lakes are all of smaller dimensions, but some of them are not inferior in picturesque beauty to those which we have described.

RIVERS.—The RHINE (RHEIN) is formed in the Grisons by the union of three streams, called the *Vorder*, *Mittler*, and *Hinter Rhein*, (*Fore*, *Middle*, and *Back Rhine.*) The first issues near St Gothard from a small lake and a stream from the glacier of Mont Badus, and receiving many torrents in its descent, traverses the Tavetsch, and at Disentis joins the middle branch, which comes from the Lake of Dim in the Val Cadelina. Continuing its course in a north-easterly direction, it receives the *Glenner* at Ilantz. The Hinter Rhein rises from the eastern base of the Vogelsberg, and flows with great rapidity through the Rheinwald and the Schamserthal, receiving in its course the *Aversa*, the *Nolla*, and the *Albula*, and joins the Vorder Rhein near Reichenau. Below the confluence the united stream becomes navigable for heavy rafts. At Coire it receives the *Plessour*, and at Malans the *Landquart*, both large streams. It quits the Grison territory below Mayenfeld, and flowing north, forms the boundary between the Tyrol and the canton of St. Gall. Near Feldkirch it receives the *Ill*, and enters the lake of Constance below Rheineck. After leaving the lake the Rhine flows with a fine navigable stream for several miles in a depression of sandstone, which being cut through transversely is exposed in hills of great beauty and fertility, on both banks, at heights varying from 700 to 900 feet. Below Schaffhausen the navigation is interrupted by the *Rheinfall*, a magnificent cataract, where the river, after boiling over a rocky channel, in a succession of rapids, bursts at last in three distinct branches over a precipice upwards of 80 feet high. Below this point it flows westward in a rocky

channel, dividing the ranges of Jura from those of the Black Forest, to Basel, where it turns abruptly north and leaves Switzerland. Its principal affluents below the fall are: — The *Thur* from Thurgau, with its tributary the *Sitter;* the *Aar*, which rises from the Lauter Aar Glacier, between the Schreckhorn and the Finsteraarhorn, in the south-eastern corner of the canton of Berne, flows through the Lakes of Brienz and Thun, receives the waters of the *Saane* or *Sarine*, from Fribourg, the *Thiel* from the Lakes of Neuchatel and Bienne, the *Emmen*, below Soleure, the *Reuss*, which rises in St. Gothard, and runs through the Lake of Lucerne, the *Limmat* (named *Linth* in the upper part of its course, and running through the Lake of Zurich), and falls into the Rhine at Coblenz.

The RHONE (RHODAN) rises from the base of Mont Furca, in the Valais, and runs through the middle of that canton into the Lake of Geneva, which it enters by three branches, which, in the course of ages, have formed a considerable delta. Its principal affluents are the *Visp*, the *Borgne*, and the *Drause*, all on the left. Half a mile below Geneva the under Rhone is joined by the *Arve*, a large river from Savoy; near Belgarde, within the French frontier, it passes underground for about a quarter of a mile, and, before reaching Lyons, it cuts through all the ranges of the Jura.

The *Tessin* rises near St. Gothard, and falls into the Lago Maggiore, which receives, besides, several other streams from the Alps. The *Tresa* falls into the Lake of Lugano.

The *Inn* has its source in the glaciers of Maloya, in the Grisons, and runs through the Upper and Lower Engadine, into the Tyrol, through which it proceeds to join the Danube at Passau.

MOUNTAINS. — See *anté*, pp. 147-150.

PEOPLE. — All the inhabitants of Switzerland belong to two principal stocks — the *Germanic*, and the *Græco-Latin*. The former comprises the Deutsch or German Swiss, who inhabit the cantons of Zurich, Lucerne, Uri, Schweiz, Unterwald, Glarus, Zug, Appenzell, St. Gall, Thurgau, Schaffhausen, and Aargau; the greater part of the cantons of Bern and Basel; a considerable part of Soleure, Fribourg, Valais, and Grison; some communes of Vaud, and the commune of Bosco in the canton of Tessin; and form about fourteen twentieths of the total population. The Græco-Latin stock comprehends the French, the Roman, and the Italian Swiss. The French occupy the cantons of Neuchatel, Geneva, and Vaud, part of Soleure, Fribourg, and Valais, and the Jura portions of Basel and Bern. They form about four twentieths of the population. The Romans or Rhætians are found only in the Grisons, in the Oberland, towards the sources of the Rhine, and in the Engadine. They speak a language more nearly resembling the Latin than either the French or the Italian, and seem to be a distinct people, but of unknown origin.* The Italians inhabit the canton of Tessin, some valleys of the Grisons, and a few places in the Valais. A few Jews live in the Aargau, and other foreigners are scattered over the country, but mostly in the neighbourhood of Geneva. The Deutsch language is used in the general affairs of the confederation; and in those of all the cantons except Tessin, Vaud, Neuchatel, and Geneva. The Swiss Deutsch, however, contains no less than 35 principal dialects; while the French has fifteen, the Italian and Roman each two; so that there are no fewer than 54 distinct dialects spoken in different parts of Switzerland. Nearly one million and a half of the Swiss are Deutsch, or German; 450,000 French; 120,000 Italian; 50,000 Romance, and 2000 Jews.

RELIGION. — The country is rather unequally divided between Calvinism and Popery. The outer Appenzell, nearly the whole of Zurich, Bern, Basel, Schaffhausen, Vaud, and Neuchatel; the greater part of Glarus, Grisons, Aargau, Thurgau, and Geneva; and the minority of the people of Fribourg, Soleure, and St. Gall, are Calvinists, or at least Protestants. Popery is the religion of Lucerne, Uri, Schweiz, Unterwald, Zug, Inner Appenzell, Tessin, and Valais; of the greater part of the people of Fribourg, Soleure, and St. Gall, and of a minority in other cantons. About twelve twentieths of the Swiss are Protestants; the remainder are Catholics, Jews, &c.

GOVERNMENT. — Before 1798, Switzerland formed a confederation composed of three very distinct parts:—thirteen cantons; the subjects or vassals of these cantons; and their allies. The thirteen cantons formed fifteen republics; of which eight were democratic, viz. Uri, Schweiz, Upper and Lower Unterwald, Glarus, Zug, and the two Appenzells; four aristocratic, viz. Zurich, Lucerne, Basel, and Schaffhausen; and three oligarchies, viz. Berne, Fribourg, and Soleure. The subjects and vassals of the thirteen cantons were countries possessed in common by several cantons. The allies were countries associated with the confederation, and under their protection.

In 1798, this constitution was changed; and again, in 1803, Switzerland was formed into a confederation of nineteen cantons, which continued till the downfall of Napoleon, when the present federal system was established. By the federal act of

* Many of the names of places in this Roman country are nearly identical with some of the most celebrated names of Central Italy; from which circumstance it has been plausibly inferred, that the ancient Latins were emigrants from these Rhætian hills, and carried with them into Italy, the names of the places they had left. The names referred to are:—*Romein, Remus, Albanuas, Lavin, Larrun, Ardez, Valere, Latin, Falise*, or *Flasch, Madullein, Curia*, or *Cuera, Peist, Samnaum, Saven, Tchapina, Umbrien, Albula*, &c. The last name, that of one of the affluents of the Rhine, is the ancient name of the Tiber; and to this hour, these people call their ancient language the "Ladin."

7th August 1815, twenty-two cantons were formed into a confederation for the mutual support of their liberty and independence. The Diet *(Tagsatzung)* which directs the general affairs of the confederacy, is composed of deputies from the cantons, who give their votes according to the instructions of their respective governments, each canton having one vote. The Diet meets by turns of two years in the chief town of the directing cantons of Lucerne, Zurich, and Bern, the burgomaster, or avoyer of which, acts as president for the turn, with the title of Landmann; and in it alone is vested the power of making treaties of peace and alliance, and of commerce. The separate cantons may treat individually with foreign powers in military matters, and for purposes of economy and police; but these treaties must not in any respect tend to injure the federal compact or the constitutional rights of other cantons. The Diet appoints and recals diplomatic agents; takes all the measures necessary for the internal and external safety of the country; regulates the organization of the contingent of troops, and appoints the general of the federal army. When the Diet is not sitting, the direction of affairs is vested in the cantons of Zurich, Bern, and Lucerne, each retaining the right for two years by turns, from 15th January 1815.

Till 1830, the twenty-two cantons formed in reality twenty-four different states, even without reckoning the three leagues of the Grisons, and the thirteen decuries of the Valais, which, strictly speaking, may also be considered as separate communities. With respect to their form of government, these states might then have been classed in the following manner: — Eight democratic republics, viz. Uri, Schweiz, Glarus, Zug, Inner and Outer Appenzell, Upper and Lower Unterwald; two democratic representative republics, viz. the Grisons and the Valais; six representative republics, viz. St. Gall, Aargau, Thurgau, Vaud, Geneva, and Tessin; three other representative republics, whose capitals enjoy great privileges in comparison with the rest of the territory, viz. Zurich, Basel, and Schaffhausen; four aristocratic republics, viz. Bern, Lucerne, Fribourg, and Soleure; and the canton of Neuchatel, which is subject to the King of Prussia. This state of things has, however, been considerably changed by the political events of the year 1830. The eight democratic cantons remain much as they were, except Schweiz, which may be considered as even now divided into two states. The Grisons and the Valais have modified several parts of their administration; and the Upper Valais may be regarded as a separate state. The six representative cantons have all enlarged the circle of their representation by admitting a greater number of electors, and lowering the qualification. The three, whose capitals had the preponderance, have been obliged to admit into the council several representatives of the rural districts; and one of them, Basel, is now definitively divided into two independent states, viz. 1. The city of Basel, comprehending some of the neighbouring communes; 2. All the other communes of the canton, with Leichstall as their capital. The four aristocratic cantons have assumed a representative form; and Neuchatel, after having suffered the evils of an armed insurrection, has returned to its old system of government. The canton of Tessin has also recently (1839) experienced a revolution, in which the democratic and catholic party has acquired the ascendant.

REVENUES. — The federal revenue is entirely distinct from that of the respective cantons; and is set apart to defray the expenses of the general administration, those of the federal army, and of public instruction. The expenses of these three branches are defrayed by means of the interest accruing from certain capitals set aside for this purpose. For other extraordinary expenses, each canton furnishes a contingent proportioned to its means. The sum total has been fixed, since 1818, at 539,275 Swiss francs (less than £30,000 sterling.)

ARMY AND FORTRESSES.—The Federal Government maintains no standing army; but there are troops constantly in the pay of several of the cantons, amounting altogether to 1200 or 1300 men, including the armed police (gen-d'armes); of these, Geneva maintains the greatest number. Each canton, however, must have its contingent to the federal army always ready to march; the number of that army is fixed at 33,758 men of all arms, besides the general staff. An equal number forms the contingent of reserve; and a general levy might turn out 200,000 men able to bear arms. The infantry is composed of 429 companies, and organized into 59 battalions of six companies each, and 15 of five each. The troops of each canton are kept separate; and consequently the strength of the battalions and companies is very various. Great difficulties therefore stand in the way, not only of organizing the army, but of keeping it together when assembled. Swiss troops are still maintained in the service of Holland, Spain, and the two Sicilies; but since 1830, none have been kept in

the service of France There are no federal fortresses; nor indeed does the country contain any fortresses properly so called, though several of the towns are fortified to a certain extent; as Aarbourg in Aargau, and Geneva, the former of which contains the federal arsenal. By the treaty of Paris, of 20th November 1815, the European sovereigns recognised the perpetual neutrality of Switzerland.

PRODUCTIVE INDUSTRY. — The Swiss possess a great many arts and manufactures, but they are very unequally distributed. The cantons of the west and the north are the most industrious. It is very common to find excellent artists and workmen among the agriculturists; and it is in consequence of this circumstance that Switzerland can maintain an advantageous competition with the manufactures of Alsace and Lyons. The cantons of Zurich, Basel, Geneva, Neuchatel, Glarus, and Outer Appenzell, are distinguished above the rest for their industry. The watches and jewellery of Geneva, of Locle, and Chaux-de-fond in the canton of Neuchatel, of Bienne and Porentrui in Bern, and of Vevay in Vaud; the stuffs and ribbons of Basel, Zurich, Gersau, Geneva, and other towns; the bleaching establishments of Aarau, Langental, Zoffingen, Emmenthal, Bern and Nidau; the slight cloths of Zurich, Bern, Lucerne, Glarus, and Basel; the fine linen and canvas of Aargau, Thurgau, Saint Gall, and Outer Appenzell; the linen and hempen thread of Lucerne, Outer Appenzell, and other cantons; the writing paper and stained paper of Basel, Zurich, Bern, Lucerne, Soleure, and Zug; the tanneries, the skins, and the hides of Berne, Vaud, Zurich, Geneva, Basel, and Aargau; the gloves of Basel and Leichstall; the laces of Couvet, Motiers, Locle, Florier, and other places in Neuchatel; the straw hats and other kinds of straw-work of Aargau, Lucerne, and other cantons; the musical instruments of Glarus; the steel manufactures of Schaffhausen; the arms, horologerie, and wooden vessels of the valley of Joux, and of several places in the canton of Bern; the goldsmith's work of Geneva, Basel, St. Gall, Neuchatel, &c.; the gunpowder of Bern; are all examples of the excellence of the Swiss in manufacturing industry. There is at Bern and Geneva a public exhibition every year of the productions of the fine and the useful arts. The towns most distinguished for the industry of their inhabitants are — Geneva, Basel, Zurich, St. Gall, Winterthur, Bern, Gersau, Herisau, Glarus, Chaux-de-fond, and Locle. In most parts, however, of Switzerland, manufacture of articles for sale is little practised; but domestic manufacture, especially of linen from the flax they grow, and of coarse cloth from the fleeces of their sheep, is almost universal among the people, particularly those of the mountains, who also dye their cloth, and often display great skill and ingenuity in the process.

The geographical position and other natural features of the country might seem an insuperable obstacle to the agricultural industry of the people; agriculture nevertheless is in a very flourishing state. It is true that the nature of the soil, the great variations of temperature, the hail storms, and the frosts of the spring and autumn, often destroy the hopes of the husbandman, and force the Swiss to depend upon their neighbours for many articles of the first necessity; but these very obstacles only stimulate their skill and industry. No where do agriculturists know better how to suit themselves to the climate; nor would it be easy to find men better informed concerning the nature and qualities of different kinds of soil, and the manner of improving and managing it; and there is not perhaps a country in the world where the advantages of agriculture are more appreciated. In visiting these mountainous countries, the traveller is struck with admiration on seeing barren rocks covered with vines or rich pastures, and the marks of the plough upon the edges of precipices so steep, that it is difficult to conceive how horses could get up to them. It is particularly in the culture of natural and artificial meadows that the Swiss farmers excel. The soil of their country seems to have been destined by nature for the feeding of cattle, and this is accordingly one of the principal branches of their industry and their commerce. They have carried to the highest degree of perfection the art of irrigation, and of improving meadows. Their numerous and fertile pasturages feed those fine cows which furnish the excellent cheese so eagerly purchased by all Europe. The cheese of Wadenschwyl, in the canton of Zurich, of Glarus, of the Grisons, of Sion, of the valley de Bagnes in Valais, of Urseren in Uri, of the canton of Fribourg, where Gruyeres is situate, of Soleure, Lucerne, Basel, and Neuchatel, are held in the highest estimation. Cows, goats, and sheep, constitute the general wealth of the Swiss farmers. The extent of a pasture is estimated by the number of cows it maintains; six or eight goats, four calves, four sheep, or four hogs, are deemed equal to a cow. The mountain pastures are generally rented in summer, either by the proprietors of cows

hiring the pasture, or by the proprietors of pastures hiring cows, which at the beginning of winter are returned to their owners. The cattle are attended on the mountains by herdsmen, who live in *chalets*, or huts of the rudest construction, to which the persons whose employment it is to milk the cows, and to make cheese and butter, repair in summer.

COMMERCE. — Notwithstanding the great obstacles presented by the nature of the country, the conflicting regulations of so many sovereign states, the difference of language, dialect, and religion, commerce may be said to flourish. Since the beginning of the present century magnificent roads have much lessened the difficulties of travelling, and facilitated communication with Italy and the Tyrol; and steam-boats have been established on the principal lakes. The most important articles of export are: — oxen, cows and calves, cheese, butter, tallow, salted tongues, cherry-brandy *(kirsch-wasser)*, extract of gentian, dried fruits, timber, charcoal, medicinal plants, cloth, silk stuffs and ribbands, laces, watches, jewellery, wood-work, tanned hides, paper, and gunpowder. The principal articles of import are: — corn and rice, salt, codfish, herrings and other salt fish, wine, brandy, dried fruits of southern countries, tobacco, silk, cotton, dyewoods, sugar, coffee and other colonial produce, manufactured articles of various kinds, particularly fine cloth, iron and copper utensils of all sorts, books and fine furniture. The transit trade is very important, and the towns which enjoy the greatest share of it are: — Basel, Soleure, Coire or Chur, Geneva, Zurich, Lucerne, Schaffhausen, St. Gall, Altorf, Roschach, Bellinzona, Lugano, and Olten. Bern, Zurich, and Lucerne, are the three great marts of the internal commerce; Basel and Geneva are the entrepôts of the foreign trade, as well as the principal towns of Zurich, Glarus, Outer Appenzell, St. Gall, Aargau, and Neuchatel. Many of the Swiss leave home for a time to engage in trade, or to practise some branch of industry in foreign countries, from which they return with their gains, some times to a considerable amount. Glarus, Vaud, Neuchatel, Geneva, Grisons, and Tessin, supply the greater number of these emigrants.

DIVISIONS. — Our space does not allow us to give the administrative divisions of each canton; the following table will therefore contain only the names of the Cantons themselves, and the principal elements of their statistics: —

CANTONS.	*Area in Geog. Square Miles.*	*Population at the end of* 1838.	*Contingent to the*		*Chief Towns.*
			Federal Budget.	*Federal Army.*	
Zurich,	517	231,576	74,000*fr.*	3,700	Zurch or Zurich.
Bern,	1,933	400,000	104,080	5,824	Bern.
Lucerne,	443	124,521	26,000	1,734	Luzern or Lucerne.
Schweiz,	256	13,519	3,010	602	Schweiz or Schwitz.
Uri,	318	40,650	1,180	236	Altorf.
Upper Unterwald, } Lower Unterwald, }	198	{ 12,368 { 10,203	1,105 805	211 161	Sarnen. Stanz.
Glarus,	211	29,348	3,625	482	Glarus, or Glaris.
Zug,	64	15,322	1,250	250	Zug.
Fribourg,	374	91,145	18,600	1,240	Freyburg, or Fribourg.
Soleure,	192	63 196	13,560	404	Solothurn or Soleure.
Basel city, } Basel country, }	139	{ 24,321 { 41,103	22,950	918	Basel, or Bâle. Leichstall or Leistall.
Schaffhausen,	86	31,125	....	466	Schaffhausen.
Outer Appenzell, } Inner Appenzell, }	115	{ 40,080 { 9,796	7,720 1,500	772 200	Trogen. Appenzell.
St. Gall,	565	158,853	39,450	2,630	Saint Gallen or St. Gall.
Grisons,	1,938	88,506	12,000	1,600	Chur, or Coire.
Aargau,	379	182,755	48,200	2,410	Aarau.
Thurgau,	203	84,124	22 800	1,520	Frauenfeld.
Tessin,	781	113,923	18,040	1,804	Bellinzona.
Vaud,	893	183,582	59,280	2,964	Lausanne.
Valais,	1,254	75,798	9,600	1,280	Sitten, or Sion.
Neuchatel,	211	58,616	19,200	960	Neuchatel.
Geneva,	69	58,666	22,000	880	Geneva.
	10,193	2,184,096	529,955	33,754	

Switzerland has no fixed capital. By the federal act of 1815, each of the towns of Zurich, Bern, and Lucerne, is in this order, for successive periods of two years, the capital of the confederation; commencing with Zurich on 1st January 1815.

TOPOGRAPHY.

ZURICH is a country of great extent, beauty, and fertility, with a dense population, and highly cultivated. The climate is sufficiently mild for the cultivation of extensive vineyards; and in the advanced state of its agriculture, it excels most of the other cantons. Great progress has likewise been made in horticulture, particularly in the management of fruit and flower gardens. The forests in the higher districts abound with stately timber, which is capable of being applied to every purpose of domestic economy, and forms a considerable source of public revenue. Abundance of peat is dug from the bogs, and a coalpit is regularly worked at Kapfnach. Grain of every kind is raised in abundance, and of excellent quality; but the revenue arises chiefly from the manufactures. The canton is divided into eleven prefectures, forming 56 tribes. The sovereign authority is vested in a great council of 212 members, of whom 26 are elected by the capital, 5 by Winterthur, 51 by the other districts, and 112 by the council itself, every fifth member being chosen from the rural departments. The executive authority rests with a smaller council of 25 members; and the 13 judges of the court of appeal, who decide all capital questions, are elected from the body of the great council. In each prefecture there is a magistrate with the title of Prefect. The established religion is Protestant; and the clergy, excepting those of the communes of Dietikon and Rheinau, are governed by a synod consisting of ten chapters. At this assembly, which meets every autumn, the minister of Zurich presides as moderator. Both in the capital and at Winterthur, the establishments for public instruction are ably and judiciously conducted. At Zurich theology, law, and medicine are ably taught; and every other branch of science and philology is cultivated with industry and success. The country schools are now on an excellent footing, and have greatly increased in number and importance. The principal towns and remarkable places are *Zurich*, *Winterthur*, *Wadenschwyl*, *Stæfa*, *Pfæffikon*, *Eglisau*.

Zurich, or *Zurch*, the capital, is situate at the north-west end of the beautiful and extensive Zurcher See, where the Limmat gushes from it in a broad and impetuous stream. It is built along both banks of the river, in a valley hemmed in by mountains, which rise between 1200 and 1500 feet above the lake. The large town, on the right bank, extends to the foot of the Zurichberg and the Susenberg, and contains a great number of sloping streets; and the same is the case with the little town on the left bank, which is built on the hills of Lindenhoff and St. Peter. It is only in the beautiful suburbs of Thalacher and Stadelhofen that the streets are horizontal. The two towns communicate by three bridges, of which the centre one only is passable by carriages. Early in the middle ages, Zurich was distinguished for every branch of knowledge, and was honoured on that account with the title of Wise. At the era of the Reformation, the desire for learning became so general among the citizens, that it was considered as the Athens of Switzerland; and, in proportion to the number of its inhabitants, it has produced more celebrated men than any other town in modern times. The town is replete with curiosities. The library, founded in 1628, contains above 40,000 volumes, several rare manuscripts, many Roman antiquities, and a cabinet of 4000 medals. The other principal public institutions are:—the Academy, or Caroline College, which, with the magnificent institute of medicine and surgery, forms a complete university; the seminary and anatomical theatre; the school of arts; the singing-schools; the deaf-and-dumb institution, and the political institute for the education of young men intended for public employments; the seminary for schoolmasters; the Physico-economic Society, to which are attached a botanic garden, a magnificent cabinet of natural history, and a library. The principal public buildings are:—the orphan-house; the munster, or cathedral; the Frauen Munster; St. Peter's church; the town-house, the penitentiary-prison, and the observatory. Population, 11,000. *Winterthur*, 12 miles N.E. of Zurich, is a pretty little town, containing about 3300 inhabitants, with considerable manufaetures, a fine town-house, a library and cabinet of medals and antiquities. *Ober Winterthur* is a village upon the site of the ancient Vitodurum, the foundations of which are still to be seen. *Eglisau* is a small town on the right bank of the Rhine, over which there is a good stone bridge. *Wadenschwyl* is a large and flourishing manufacturing village, on the south side of the lake. It contains the largest tannery in Switzerland, and has about 3300 inhabitants. *Rheinau*, a small town on the Rhine near Schaffhausen, with a rich Benedictine convent, on an island in the river. The convent possesses a fine library, with collections of pictures and various objects of art and antiquities. Twelve miles S. of Zurich is Cappel, where Zuingle, the Swiss reformer, was killed in a battle fought between the Catholics and Protestants in 1531.

BERN is one of the largest of the cantons; but a great part of its surfaee, particularly in the Oberland, is too mountainous to be habitable. The northern part of the canton is well cultivated, and produces wine and corn in sufficient abundance to supply the wants of the population. The mountainous districts afford pasture for cows and sheep, and the produce of the dairies is abundant. There are some manufactures of linen, and in one district some watchmaking. Bern is subdivided into four bailiwicks, of which the capital forms one, the six largest towns another, the five smaller towns a third, and the ancient bailiwicks a fourth. Agriculture is everywhere held in honour, and large capitals are annually disbursed for its improvement. The Emmenthal,* one of the most fertile districts in Switzerland, and the garden of this canton, is peculiarly interesting on account of its high state of cultivation, the variety and abundance of its produce, and the activity of its manufaetures. It is not less so on account of its many natural curiosities, and the rich field of speculation which it throws open to the geologist. The mountains of the canton contain many rich metallic veins; but, from the expense of working them, they are left untouched. They likewise abound with mineral springs; upwards of sixty of which, all more or less known for salubrious qualities, are annually visited by invalids. The principal of these are:—the baths of *Leissigen*, *Weissembourg*, *Blumenstein*, *Gurnigal*, *Langenau;* the sulphur-baths near *Frutigben*, *Sommerhaus*, and *Thalgut*. The Protestant religion is established by law. All the burgesses of the canton are eligible to offices of trust in the State. The government is vested in two councils, the smaller of which is entrusted with the executive department. The principal towns and places are:—*Bern*, *Burgdorf*, *Hofwyl*, *Thun*, *Untersee*n, *Porentruy*, *Bienne*, *Delemont* or *Dellsperg*, *St. Ursanne*, *Langenthal*, *Lauterbrunnen*, *Grindelwald*, *Meyringen*, *Gutannen*, *Langnau*, *Leuk*, *Weissenburg*, *Saanen*, and *Aarberg*.

Bern, the capital of the canton, is situate on the left bank of the Aar, in north lat. 46° 57′, is 1798 feet above the level of the sea, and considered one of the finest towns in Europe. The streets extend in a parallel line from E. to W., and are broad and regular. The prospects are very beautiful, particularly from the terrace near the cathedral, which is a beautiful gothic building, and its steeple is particularly admired. The buildings of the academy have nothing interesting in their appearance; one of them contains an indifferent library, with some antiquities and specimens of natural history. In the principal streets the pedestrian is protected by long covered porticoes, raised above the carriage way, and affording, according to the season, an agreeable shade or shelter. The middle of the streets is occupied by an open stone channel, filled with a rapid stream of water, and the pavement is kept as clean swept as the floor of a cottage. The streets are further embellished with a profusion of beautiful fountains, sur-

* The word *thal*, of so frequent occurrence in the map of Switzerland, means valley, or dale, dell, strath, glen, and is generally attached to the name of the river that runs through it; as, *Emmenthal*, *Linththal*, *Rheinthal*.

mounted with statues. Bern possesses an academy, or university, a veterinary school, a military academy, a theological seminary, and many other useful and scientific institutions and societies. The inhabitants, by the last enumeration, were found to amount to 20,500. Six miles north of Bern is *Hoffwyl*, a celebrated educational institution, founded by M. de Fellenberg. *Thun*, the chief town of the Oberland, is situate upon the Aar, to the north-west of the Thunner see, and is a small town of about 2000 inhabitants. It contains the military school of the Confederation. Near Thun are the baths of *Gurnighel*, which are very much frequented. Near *Lauterbrunnen*, 17 miles S.E. of Thun, is the magnificent cascade of the *Staubach*, the height of which is 800 feet over a perpendicular precipice; and still more to the south-east is situate the *Jungfrauhorn* (Virgin Peak), a mountain considered to be inaccessible till 1811, when it was ascended by M. M. Meyer and d'Aarau. *Unterseen*, a pleasantly situate small town on the Aar, between the lakes of Thun and Brienne. *Grindeldwald*, a village 3150 feet above the level of the sea, is one of the most romantic places in Switzerland; in its neighbourhood is the celebrated glacier which bears its name; and not far to the south-east, are the *Shreckhorn* and *Finsteraarhorn*, the latter of which is one of the highest of the Alps, and the culminating point of the Bernese range. *Mersingen*, on the Aar, is the chief town of the interesting valley of *Hassli*, whose inhabitants are noted for their tall stature and fine figures. In its neighbourhood is the *Reichenbach*, a series of the finest waterfalls in Switzerland. There are altogether six falls; the first being 250 feet of perpendicular height, and the descent from the first to the last being about 1000 or 1200 feet. In the opposite, or north-west part of the canton are,—*Bienne*, a small town with 2300 inhabitants, at the lower end of the Bieler see, in which lake there is a small island, called St. Peter's, containing a house once inhabited by J. J. Rousseau; *Pierre Pertuis*, a passage opened in the mountains of Jura by the Romans; *Porentruy* (*Bruntrut* of the Germans), a town containing 2400 inhabitants, with manufactures of cotton and arms; *Saint Ursanne*, a small town upon the Doubs, with iron mines in its neighbourhood; *Dellsperg*, or *Delemont*, a small town with 1000 inhabitants, and containing manufactures of cloth and watches; *Aarberg*, a small town on the Aar, 10 miles N.W. of Bern.

LUCERNE, or LUZERN, is a canton of considerable extent, generally covered with hills, and interseeted by numerous valleys. Agriculture is the chief occupation of the people; the vine is not much cultivated; and it is only in the valley of the Entlibach that cattle are reared, by a race of men of prodigious and remarkable powers. The Catholic is the established religion.

Lucerne, or *Luzern*, the capital, is situate at the lower end of the lake of the forest cantons, on the Reuss, which divides it into two parts, at the foot of Mount Pilate. The town is in general ill-built, and has narrow streets; but the bridges are of great length, and, being covered on the top, afford a sheltered passage at all times. One of them, the Kappel-bruck, is 1000 feet long; another, called the Hofbruck, is 1380. Lucerne is the ordinary residence of the Papal nuncio to Switzerland, and has about 6000 inhabitants. It contains a celebrated map in relief of 180 leagues in extent round the lake of Lucerne, which was executed by General Pfyffer; and at a gunshot from the town is a monument raised to the memory of the Swiss soldiers who perished at the Tuileries in Paris in 1791. The monument consists of a colossal lion cut in the mountain. Mount Pilate rises above the town to the height of 5760 feet, or 7080 feet above the level of the sea, and contains at its summit a small lake, in which Pontius Pilate is said to have drowned himself. *Sempach*, upon the lake to which it gives its name, is renowned in Swiss history for the victory gained by the burghers of Lucerne over the Austrians in 1386.* *Saint Urbain* is remarkable for the vast buildings of its abbey, its library, and collections of medals and objects of natural history. *Hitzkirch* is noted for a school opened there in 1826. *Sursee*, is a small town at the northern end of the Sempacher See; and about a league distant from it are the baths of *Knoutwyl*, celebrated so early as 1486, for the cure of rheumatism, &c.

SCHWEIZ, or SCHWITZ, is situate to the east of Lucerne, and is one of the three cantons that laid the foundation of the independence of Helvetia; and has given its name to the country and the people which compose the confederacy, viz. Schweitzerland and Schweitzers, softened into Switzerland and Swiss. The whole canton is devoted, with trifling exceptions, to pasture and the breeding of cattle. Latterly, however, the arts of cotton-spinning and lace-making have been introduced. It extends along the greater part of the north-eastern side of the Vier-waldstatter-see, and from that northward to the lake of Zurich.

Schweiz, *Schwyz*, or *Schwitz*, the capital, is situate about a league from the former, at the foot of the Mythen, a double crested mountain 5868 feet high. The town itself, but particularly its vicinity, presents many neat and even elegant specimens of domestic architecture, and abounds in beautiful situations, of which the wealthier inhabitants have availed themselves in constructing villas and summer-houses. Nothing can be more beautiful than the approach to Schweiz. The principal public buildings worth notice are the arsenal, the town-house, the church, the hospital, a public seminary, a Dominican nunnery, and a Capuchin convent.—Population, 5000. *Einsiedeln*, 9 miles N.N.E., is a celebrated Benedictine abbey, to which a miracle-working image of the Virgin attracts great crowds of pilgrims, not only from Switzerland, but also from the neighbouring Catholic countries. *Art* or *Arth*, a large and handsome village, with 2000 inhabitants, is situate at the southern end of the Lake of Zug, between the Righi and the Rouffiberg. *Kusnacht*, upon a bay of the Lake of Lucerne, is noted in Swiss history as the place near which the Austrian *Vogt* or *Baillé*, Gessler, was killed by William Tell; the spot is marked by *Tell's Chapel*. *Gersau*, upon the same lake, a pretty little town with about 900 inhabitants, was, prior to 1798, a sovereign republic, which was considered to be the smallest state in Europe. It is now annexed to Schweiz. Between Gersau, Kusnaeht, and the Zuger Zee, rises the *Righiberg*, a noted mountain much visited by travellers, upon which there is a Capuchin hospice and several inns. Between the Righi and the Rossberg, lies the valley of *Arth*, where Goldau and several other villages were completely overwhelmed, in 1806, by a tremendous fall of earth and rocks from the Rossberg. In the upper part of the valley is the beautiful *Lake of Lowerz*, about a league in length. *Brunnen*, a village on the lake of the cantons, S.W. of Schweiz, is the entrepôt for all the goods destined for the Italian market, which are conveyed from this place to Fluelen by water, and thence across Mont St. Gothard.

URI, one of the original three States which founded the Swiss Confederation, lies to the south of Schweiz, and consists of ten or twelve valleys embosomed among the Alps. The Reuss carries all their waters into the lake of the four cantons. The whole canton is covered with meadows and alpine pasturages; but, besides the profits of their cattle, the people derive great advantages from the passage of the goods which are carried over the St. Gothard. The principal valley having a free passage to the south wind, the climate of the lower part of the canton is very mild; peach and chestnut trees,

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* In *Blackwood's Mag.* II. 531, there is a translation of a very interesting ballad history of this battle, written by one of the victors, Albert Tchudi, a shoemaker of Lucerne. The victory was chiefly owing to Arnold of Winkelreid, who, rushing upon the enemy's spears and pushing them aside, opened a way for his countrymen into the heart of the Austrian phalanx, where the long spears were useless. His bravery cost him his life; but his grateful fellow-citizens have perpetuated the memory of his heroic virtue by a statue in the market-place.

and the finest vegetables thrive remarkably well, and in general the vegetation is more early than at Lucerne by a fortnight at least. The government is democratic, and the religion Catholic.

Altorf, a small town, is the capital, with 1500 inhabitants, situate near the lake, and is noted as the cradle of Swiss liberty. *Flueten*, a village on the lake, is the port of Altorf. The road into Italy by the pass of St. Gothard, is carried up the valley along the channel of the Reuss, which it crosses several times; one of the crossings being by the *Teufel's Bruck* or *Devil's Bridge*, noted for a sanguinary conflict between the Russians and the French in 1799. The hospice of St. Gothard is 6808 feet above the level of the sea. On the shore of the lake, near Flueten, is *Tell's Platte*, the spot where he escaped from Gessler; and on the opposite side of the lake, 3 miles N.W. is *Rutli* or *Grutli*, the meadow where the revolt of the Swiss against the Austrian yoke was plotted. About 10 miles east of Altorf is a very difficult and dangerous mountain pass, leading to Schweiz, called the *Zug der Russen* (Russian Pass), since the march effected over it by the Russian army under Suwaroff in 1799.

UNTERWALDEN, one of the original cantons, lies among the Alps, and is composed of five valleys, covered with meadows and pastures, and contains four lakes, and two considerable streams, the *Aa* and the *Melchbach*. The eastern part of the canton enjoys a mild climate; the walnut and other fruit trees thrive amazingly; chestnut trees grow even at Kirsiten, on the lake of Lucerne; and in various parts of the canton three or four crops of hay are cut every year. The canton is now divided into two separate democratic republics. The Roman Catholic is the established religion; and the people have been always distinguished for their gravity and devotion, and for unlimited confidence in their priests. Rural economy is the general employment, except in the valley of Enghelbert, where silk is spun. Their cheese improves with age, and is in great request for long sea voyages.

Stanz, the capital of the Niedwald, or lower division, is situate not far from the lake, and contains about 2000 inhabitants. *Sarnen*, the capital of the Obwald, or Upper Division, is a fine town, at the north end of a lake, with about 2000 inhabitants, a beautiful church, an arsenal, and a college. *Enghelbert*, near the Aa, in a romantic valley, is celebrated for its Benedictine abbey, the abbot of which was formerly a sovereign prince. *Kerns*, near Sarnen, is a small town, with a fine church and 2100 inhabitants. *Lungern*, a village with 900 inhabitants, beautifully situated at the head of the valley of Sarnen.

GLARUS, or in French GLARIS, lies to the eastward of Uri and Schweiz, and consists of one large valley, with three lateral branches, all encompassed by high mountains, which enclose the canton on all sides except the north. The Roman Catholic faith and Protestantism are both recognised by the State, but most of the people are Protestants. The mountaineers of this canton are famed for the making of cheese, particularly the Schabzieger, which is made by them only, and in greatest perfection in the *Klonthal*, W. by S. of the capital. The canton also abounds in slate quarries, the principal of which is in the *Sernfthal*, where slates are obtained of a size large enough to serve as tables.

Glarus, the capital, is situate on the left bank of the Linth, and has a reformed college, a library, flourishing manufactures, and about 4000 inhabitants. The other principal places are: — *Mollis* and *Schwanden*, two considerable towns with cotton manufactures; *Lint-thal*, a small village in the valley of the Linth, with the fine baths of *Starchelberg* in the neighbourhood, and the *Pantenbrake*, built about 200 feet above the stream of the Sandbach; *Naefels*, a village near the Linth, noted for a victory gained by the Swiss in 1388; and *Elm*, a small village in the Sernft-thal, in the neighbourhood of which is *Martinsloch*, a large round hole in the mountain of Falsberg, behind which the sun passes on the 3d, 4th, and 5th of March, and 11th, 15th, and 16th of September each year. Owing to the great height of the mountain the village loses the sight of the sun for six weeks in winter.

ZUG, is the smallest of the cantons, and consists chiefly of mountains covered with wood. It contains three lakes; those of Zug, Egheri, and Fin-tersee. The inhabitants are Catholics, and have enjoyed a popular government ever since the year 1352. They are chiefly employed in the cultivation of their orchards, vineyards, and fields; but the produce of their flocks and mountain pastures is their principal resource.

Zug, the capital, is a pretty little town, at the north-east side of the lake, and contains about 3000 inhabitants. The other remarkable places in the canton are: — *Baar*, a large village of 2000 inhabitants; *Cham*, an industrious town, also with 2000 inhabitants; *Morgarten*, a defile on the east side of the lake of Egheri, where, in the year 1315, 1300 Swiss gained a splendid victory over an army of 20,000 Austrians. Another battle was fought at the same place in 1799, between the French and the Swiss, whose women fought with heroic courage beside their husbands and fathers; but with less success than attended the efforts of their ancestors in 1315.

FRIBOURG, or FREYBURG, is situate in the western part of Switzerland, between Bern and Vaud, and is traversed nearly from the one end to the other by the river Sarine or Saanen. The upper part of the canton is mostly composed of hills and mountains, the lower abound with pastures, fields, and forests. With respect to climate, soil, and productions, the canton may be divided into three very distinct parts. The first, or upper part is the country of *Gruyeres*, so famous for its cheese, situate among the Alps, and abounding with pasturages and forests. The horned cattle are there the finest in Switzerland; but the people being more inclined to business than to agriculture, are continually emigrating. They speak a dialect of the Romance tongue. The second, or middle part, which contains the capital, is rich in pastures, fields and forests, and carries on a considerable trade in straw, horses, and sheep. The third or lowest part, which extends to the lakes of Morat and Neuchatel, abounds in corn and wine.

Fribourg, the capital, is a considerable town of a very remarkable appearance, built partly upon the bank of the Sarine, and partly upon the declivity of a steep rock. Its principal buildings are:— the cathedral, whose steeple is the highest in Switzerland, and its organ the finest toned in Europe; the town-house; the new Jesuits college, capable of accommodating 500 or 600 boys, who are educated in all the branches of literature and philosophy; the new suspension bridge, thrown across the Sarine, and very remarkable for its great length, and its great height above the river. It stretches across a gorge 160 feet deep, and has a span of 885 feet. The trade and industry of the inhabitants have made considerable progress of late years. — Population, 7000. In the immediate vicinity, on the banks of the Sarine, is the *Grotto de la Madeleine*, consisting of a chapel, with its belfry, a large hall, and several other rooms, a kitchen, and a cellar, all cut in the rock, between the years 1670 and 1680, by the hermit Jean Dupré. The other principal places are:— *Altenriff*, an abbey with a rich library; *Morat*, or *Murten*, a pretty little town, on the banks of the lake to which it gives its name, noted for the victory gained by the Swiss in 1476, over Charles the Bold, Duke of Burgundy; *Charney*, a very small town in the valley of Bellegarde, the centre of the manufacture of the Gruyere cheese; *Valsainte*, a vast chartreuse in a romantic situation; and *Gruyeres*, a village of 350 inhabitants, not far from the left bank of the Sarine.

SOLEURE, or in German SOLOTHURN, is situate between the Aar and Mont Jura, and extends a considerable distance among its ridges. The care of their flocks and herds, and the cultivation of their fields, are the chief occupation of the inhabitants, who excel in the art of watering and manuring them. They plant immense quantities of fruit-trees, but pay very little attention to the culture of the vine. A few of them are also engaged in the linen, woollen, and cotton manufactures. With few exceptions they profess the Catholic faith.

Soleure, or *Solothurn*, the capital, is a fine little trading town, upon the Aar, and the ordinary residence of the Bishop of Basel, whose jurisdiction comprehends all the Catholic inhabitants of Soleure, Basel, Lucerne, Bern, Aargau, Zug, and Thurgau. The church of St. Ursus is considered the finest in Switzerland. In the vicinity are:—excellent stone quarries; the celebrated hermitage of Saint Verena; the farm-house of *Wissenstein*, built upon the top of a hill, 4221 feet above the level of the sea, and 2600 above Soleure; from which the whole valley that separates the Jura from the Alps may be seen at one glance; *Ballstall*, a small busy town, with an iron mine; *Olten*, a town of 1200 inhabitants, on the Aar, over which there is a fine covered bridge.

BASEL (in French, *Bâle*), is situate at the north-western corner of Switzerland, on the north side of the Jura, and consists of several fertile valleys, bordered by mountains covered with excellent pasturage. It is plentifully supplied with springs and rivulets, of which the people have availed themselves for irrigating their meadows, a branch of agriculture which they have brought to a high degree of perfection. It is now divided into two separate republics. The government is decidedly democratic, and the system of equality established by law is the boast of the citizens.

Basel, the capital of one of the States, is situate upon the Rhine, at the point where it turns to the northward, in 47° 33′ N. lat., 462 feet above the level of Strasbourg, and 930 above that of Amsterdam. It is a well-built and large city, consisting of two towns, named Great Basel and Little Basel, divided by the Rhine, across which there is a fine bridge. Great Basel is on the left bank of the river, and contains about 1750 houses, with wide and handsome streets, and well-built suburbs. Little Basel is on the right bank, and contains only 450 houses, with narrow and irregular streets. The principal buildings are:—The cathedral, a beautiful gothic structure, one of whose towers is the highest in Switzerland after that of Frihourg; the town-house; the hall where the famous ecclesiastical council was held between 1431 and 1438; the Margrac-fischer-hof, and the arsenal. Next to Zurich and Geneva, Basel is particularly distinguished for the intelligence and industry of its citizens, and for the extent of their trade. It contains a famous university, and a number of other scientific and literary societies and institutions.—Population, about 18,000. At *Augst*, about six miles E. by S. of Basel, at the confluence of the Ergollz with the Rhine, are several remains of the Roman town of *Augusta Rauracorum*, where three great military roads met. *Arlesheim*, on the Birse, three miles south from Basel, is a small town with 800 inhabitants, well frequented baths, and a celebrated garden in the English style, laid out in 1787, by the Baron de Gleresse. *Liechstall*, or *Liestall*, 14 miles S.E. of Basel, a town of about 2000 inhabitants, has become the capital of the country part of the dismembered canton.

SCHAFFHAUSEN is a small hilly canton, entirely situate upon the right, or northern side of the Rhine, to the westward of the Boden see. The cultivation of the vine is one of the chief occupations of the people, and their red wine is the best in German Switzerland. The inhabitants are all Protestants.

Schaffhausen, the capital, is situate on the slope of the north bank of the Rhine, and is a pretty well-built town, with an industrious population, and considerable trade. Its celebrated wooden bridge, which was burned by the French in 1799, has been succeeded by another no way remarkable.—Population, 7000. In the vicinity are:—*Laufen*, a chatean beside the Rheinfall, which presents a magnificent spectacle, when viewed from the balcony of the castle; *Stein*, on the north bank of the Rhine, a small trading town with about 1200 inhabitants, but situate in the canton of Thurgau.

APPENZELL is situate in the north-eastern part of Switzerland, to the south of the Boden see, and is entirely surrounded by the canton of St. Gall. It is divided into two separate states, called the Inner Rhoden and the Ausser Rhoden, or the Catholic and the Reformed Appenzell. Their government, finance, police, and other public matters, are quite distinct; but the two deputies whom they send to the Diet have only one vote, which they lose if they cannot agree in opinion. Both states are democracies; every man above 16 years of age having a vote in the *Lands-gem inde*, or general assembly, which is held in the open air, and decide on peace and war, on the laws, and elect the magistrates and executive councils. The Inner Appenzell is an alpine country, where the people are mostly employed in the rearing of cattle; the people of Ausser Rhoden, or Outer Appenzell, are distinguished for their manufacturing industry, and their attachment to trade. Great numbers of snails are fattened at Appenzell, whence they are conveyed a short time before Lent to the convents of Swabia and Bavaria, where they are considered as delicacies.

Appenzell, a considerable town with 5000 inhabitants, is the capital of the Catholic State; *Trogen*, a fine little town, with a considerable trade, and an industrious population of 2400 inhabitants, is the capital of the Protestant division. The other principal places are:—*Gais*, a village noted for its muslin manufactures, and much frequented by strangers as well as natives, to drink whey; *Herisau*, a large well-built trading town, with manufactories of muslin and cotton cloth, and other articles, a library, a gymnasium, and about 7000 inhabitants.

ST. GALL, or ST. GALLEN, is a large canton, extending from the Rhine and the Lake of Constance to the Lakes of Zurich and Wallenstadt. It is divided into 8 districts,—St. Gallen, Gossau, Upper and Lower Tockenburg, Rheinthal, Roschach, Sargans, and Utznach. It is composed generally of hills and mountains, interspersed with cultivated valleys, fields, vineyards, and orchards. Besides the ordinary branches of agricultural industry, manufactures of various kinds, particularly of cotton and muslins of the finest texture have been introduced. The iron and glassworks are also in some repute, and new enterprises of various kinds are daily rising into notice. The government is entirely popular, and is vested in a grand council of 150 members, from whom are chosen the judges, magistrates, and public officers. In the capital is a lyceum for Catholics, and a gymnasium for Protestants, which are tolerably well organized. Several of the smaller towns have public schools; and education is spreading generally over the canton.

St. Gallen, the capital, is a considerable town, very industrious and commercial, situate upon the Steinach. It is one of the cleanest, prettiest, and best built towns in Switzerland, the centre of an extensive manufacture of fine cloths, and muslins; and its manufactures extend their connections even into Swabia, where a great deal of work is done on their account.—Population, 10,000. The other remarkable places in the canton are:—the *Krazernbruck*, a fine bridge lately built over the Sitter, which rises 85 feet above the water; *Roschach*, a fine town of 1500 inhabitants, very busy and commercial, with a port upon the Boden see; *Rapperschwyl*, a small town of 1200 inhabitants, upon the north side of the Lake of Zurich, across which it has a wooden bridge 4800 feet long; *Sargans*, a small town with 600 inhabitants, near the Rhine, upon the great road from Germany to Italy by the Splugen; *Pfeffers*, a village, with celebrated sulphureous baths, of very difficult access, in a deep gorge of the Tamina, which falls into the Rhine below *Ragaz*; *Wallenstadt*, a small town, picturesquely situate at the east end of the Wallenstatter see, amidst wild and rocky hills. The waters of the lake having become dammed up by the rubbish brought down by the Linth, a canal has been formed for conveying them to the Lake of Zurich; and the course of the river has been altered, so as to bring it into the Lake of Wallenstadt, where its rubbish may accumulate without a repetition of the mischief. *Rheineck*, a small trading town in the Rheinthal, near the entrance of the Rhine into the Lake of Constance, with only about 900 inhabitants, but enjoying a very considerable transit trade; *Altstetten*, one of the prettiest towns in the Rheinthal, with nearly 2000 inhabitants, situate on the slope of a hill in the Appenzell range of mountains; *Semwald*, a village not far from the Rhine; and *Wildhaus*, at the foot of the Santis, near the source of the Thur, the birth-place of Zuingle, the Swiss reformer.

The canton of the GRAUBUNDTEN, or GRISONS, is, next to Bern, the largest in Switzerland, and comprises 60 valleys, which may be classed as belonging to the five following stems, viz. the valley of the Lower Rhine; the valley of the Upper Rhine; the valley of the Albula; the *Engadine*, or valley of the Inn; and the *Prettigau*, or valley of the Landquart. The whole territory is one congeries of snow-clad Alps, interspersed with valleys not less remarkable for their beauty and fertility, than for the sublime and magnificent framework in which they are set. With the exception of the northern chain of mountains, which consists of immense argillaceous and calcareous masses, all the Alps of the Grisons are of primitive formation, and very rich in minerals, particularly in iron. Mines of lead, copper, silver, and even gold, have been worked in them for many years. The canton consists of three leagues, or federal republics; the Grey League; the League of the House of God; and the League of the Ten Jurisdictions; each of which has different laws and usages, and is in many respects almost quite independent. About two-thirds of the people are Protestants, and the remainder Catholics; and besides the episcopal chapter at Chur, there are in the canton seven convents, among which is the celebrated abbey of *Dissentis*. The schools are daily attracting more attention on the part of Government, and a great public seminary has lately been established in the capital. The principal employment of the people is agriculture and grazing, and they carry on a great trade in horned cattle, of which they raise annually from 80,000 to 90,000, besides 100,000 sheep, 60,000 or 70,000 goats, and swine in proportion. With Italy alone they do business in this line to the amount of £80,000 annually. In the Upper Engadine cheese is made, which in mellowness and flavour equals the Gruyere, and was formerly in great request in the Italian monasteries.

Chur, or *Coire*, the capital, occupies a picturesque situation on the Plessour, about two miles from its confluence with the Rhine, and on the great road to Italy by the Splugen. It is the see of a Catholic bishop, who resides alternately here and at St. Gallen; has about 5000 inhabitants, and carries on a considerable trade. The other remarkable places are: — *Thusis* or *Tusis*, a lively and bustling little town of 500 or 600 inhabitants, at the commencement of the *Via Mala*, a narrow ravine, which extends between Tusis and Zillis, along an abyss of frightful depth, and is in some places only a few yards wide. The road crosses the Rhine by three bridges of great boldness, particularly the second, which is 500 feet above the river. *Mayenfeld*, a small town with 900 inhabitants, at the entrance of the Prettigau, the most fertile valley of the canton, 1163 feet above the level of the sea. The road from Mayenfeld to Feldkirch passes through the *Lucienstieg* or *defile of St. Lucie*, a narrow gorge, flanked with high rocks, and having at its northern extremity a strong rampart with a gate, on the frontier of the Austrian territory of the Vorarlberg. *Dissentis*, the chief town of the valley of Tavetsch, one of the highest and most romantic in all Switzerland, is a considerable place with 1100 inhabitants, and a celebrated abbey. *Selva*, in the same valley, is one of the highest villages in Europe, being about 930 toises (5947 feet) above the level of the sea. *Pleif*, the principal place in the valley of Lungnez, is not less wild than Selva, and surrounded like it with immense glaciers. *Splugen*, a village with about 600 inhabitants, near the Hinter Rhein, in the Rheinwald, is an important place in the commerce of eastern Switzerland, inasmuch as three roads meet there, viz. that of Chur by Tusis along the Rhine; that of Bellingona, by Mont St. Bernardine; and that of Chiavenna by the pass of the Splugen, one of the finest Alpine paths, and rivalling in every respect the celebrated route of the Simplon. *Pontrasina*, *St. Moritz*, *Sameden* and *Zernetz*, upon the Inn, are small towns in the *Engadine*, one of the largest and wildest of the Swiss valleys, surrounded with glaciers and lofty mountains. St. Moritz is remarkable for its ferruginous mineral waters, and its elevated situation which is 5940 feet above the level of the sea. *Davos*, a small town of 600 inhabitants, with mines of lead and zinc. *Wiesen*, a village, near which there is a bridge more than 1200 feet above the torrent which flows in the abyss beneath it. The people of the Upper Engadine not only supply themselves with cloth, but manufacture a quantity sufficient to procure in exchange from the Italian Grisons, wine, corn, and rice. *Tarasp* is the only village in the valley which adheres to the Catholic faith; and exhibits a striking contrast to all the rest of the district, being dirty, dilapidated, and miserable.

AARGAU, or ARGOVIA, extends along the south bank of the Rhine, between Zurich and Basel, and stretches southward to the borders of Lucerne. It is one of the largest and most fertile of the cantons, and includes the lower part of the valleys of the Aar, the Reuss, and the Limmat.

Aarau, the capital, is a fine town with about 4000 inhabitants, situate upon the Aar, and distinguished for its manufacturing industry, and the activity of its printing presses. The other remarkable places are: — *Rheinfelden*, on the left bank of the Rhine, at the lower end of a rapid of 3 miles in length, a small town with about 1600 inhabitants, and a stone bridge: *Zurzach*, also on the Rhine, a small town with 850 inhabitants, and noted for two annual fairs; *Bruck*, a small place upon the Aar; and near it is *Windisch*, a village at the confluence of the Reuss and Limmat, upon the site of the Roman *Vindonissa; Baden*, on the Limmat, with 1700 inhabitants, contains celebrated baths (called the *Thermæ Helveticæ* by the Romans) and a fine bridge; *Schinznach*, on the Aar, with sulphureous baths, which have been lately more frequented than those of Baden: *Habsburg*, or *Hapsburg*, a castle near Schinznach, the cradle of the Imperial House of Austria; *Lezburg*, on the Aar, a pretty little town with 2000 inhabitants. *Aarburg*, on the right bank of the Aar, a small fortified town with about 1000 inhabitants; *Zofingen*, a flourishing town of nearly 2000 inhabitants, with manufactures of cotton, silk, ribbands, &c., a gymnasium, a library, and a rich cabinet of medals: *Gross Laufenburg*, on the left bank of the Rhine, where it has a contracted channel and forms a caseade, is a small town, connected by a bridge with *Kleine-Laufenburg* on the north bank, in the territory of Baden; *Coblenz*, a small town, at the confluence of the Aar with the Rhine.

THURGAU, or THURGOVIA, is situate in the north-eastern part of Switzerland, between the Lake of Constance and the cantons of Zurich and St. Gall. It is composed, like the rest, of plains and hills, and the soil is reckoned the richest and most productive in German Switzerland.

Frauenfeld, the capital, a small town near the right bank of the Murg, has several silk manufactories, and about 1800 inhabitants. The other remarkable places are: — *Weinfelden*, a small town not far from the right bank of the Thur, with about 2000 inhabitants: *Steckborn*, upon the Unter see of Constance, with 1900 inhabitants; *Diessenhofen*, on the left bank of the Rhine, with about 1200 inhabitants, a roofed bridge, wide and handsome streets, and agreeable environs; *Arbon*, on the Lake of Constance, with 900 inhabitants; and *Bischoffzell*, near the Thur, with 1200 inhabitants.

TESSIN is situate on the south side of the great chain of the Alps, and is chiefly composed of the valleys of the Tessin or Ticino, and some other streams that flow to the Lago Maggiore and the Lake of Lugano, with the lofty mountain ridges which divide them. The climate is mild, and the soil is fertile, and well watered: yet in no part of Switzerland is there more poverty, bordering on wretchedness, so much idleness, and so little industry. All the people, except those of the village of Bosco in the Val Maggia, are of Italian extraction: and the Roman Catholic faith is the only religion tolerated in the canton.

Bellinzona, or *Bellenz*, the capital, is a small trading town, with about 1300 inhabitants, situate on the Tessin, in the lower part of the great Val Levantine; and is one of the most important points in Switzerland in a military and commercial view, on account of the great roads which meet there: viz. that of *St. Gothard*, between Ariolo in this canton, and Andermadt in the canton of Uri, a fine carriage road, which was completed at the expense of the two cantons in 1830, instead of the old one, which was only passable for mules and horses; that of *Lukmanier*, between Faido in Tessin,

and Santa Maria in the Grisons; that of *Bernardin*, which connects the Val Misocco with the great road of the Splugen; and that of *Monte Cenere*, between Bellinzona and Lugano, terminating at Como; and lastly, the road to Milan along the Lago Maggiore by Sesto Calende. The other principal places are:—*Locarno*, at the northern extremity of the Lago Maggiore, or Langen See and the mouth of the Maggia, a small town, with a considerable trade; *Lugano*, a small town, with 4000 very industrious and commercial inhabitants, very agreeably situate upon the lake to which it gives its name; *Airolo* and *Faido*, very small towns in the upper part of the Val Levantine.

VAUD, in German WAAT, includes a part of the chain of Jura, and the western extremity of the Bernese Alps. The greater part, however, of the canton consists of plains intersected by cultivated hills of great beauty and fertility, more particularly along the shores of the Lake of Geneva, which forms its southern boundary. The vines of this canton are considered equal to any in Europe; and the wine enjoys a considerable reputation. The inhabitants are mostly employed in agriculture; and profess the Protestant faith, though Catholics are allowed the free exercise of their religion.

Lausanne, the capital, a fine city with 12,000 inhabitants, is situate upon three hills near the northern shore of the Lake of Geneva, 432 feet above its level. The streets are narrow, and in some places very steep. The cathedral church of Notre-Dame is a handsome gothic building, and the view from its tower is very beautiful. The town possesses numerous privileges, and appoints its own magistrates. It possesses likewise a college founded at the Reformation, and several scientific and literary institutions. The environs of Lausanne are renowned for their beauty, and are studded with large and delightful villas, inhabited by opulent Swiss or foreigners. The other principal places are:—*Vevay*, a town of 4000 inhabitants, with a college and a fine square, in a delightful situation on the lake, south-east of Lausanne; *Clarens*, a small village near Vevay, visited by many strangers, as the place of the most interesting scenes of the Nouvelle Heloïse; *Bex*, a small town, near the Rhone, in the south-eastern part of the canton, with a noted salt-mine, baths, a fine church, and an immense gallery cut in the rock; *Morges*, or *Morsee*, on the lake, 7 miles W. of Lausanne, a small town, with a college, a library, a school of artillery, and the arsenal of the canton; *Nyon*, a flourishing town, with numerous tanneries, and a porcelain work, situate on the lake 20 miles S.W. of Lausanne; *Avenche*, a town of 1100 inhabitants, situate upon the Broie near the lake of Morat, with a fine lunatic hospital, and several remains of the Roman *Aventicum; Yverdun*, a small busy town at the southern extremity of the Lake of Neuchatel, noted for its baths, deaf-and-dumb school, college, and the educational institution of Pestalozzi; *Grandson*, also near the lake, to the N.W. of Yverdun, a small town noted in Swiss history for the victory gained over the Duke of Burgundy in 1476; *Moudon*, or *Milden*, on the left bank of the Broie, a small ill-built town with a college, some remains of antiquity, and about 2000 inhabitants; *Copet*, a very small town on the lake, near Geneva, noted as the residence of the celebrated M. Neckar, and his illustrious daughter Madame de Stael; *Rolle*, a small but handsome town, also on the lake, with a spring of mineral water. At the east end of the lake of Geneva is the castle of *Chillon*, an ancient edifice rising out of the water, and celebrated in Byron's beautiful poem of "The Prisoner of Chillon;" and, next to Chillon, the most striking edifice in the canton is the *Chateau de Wuflens*, 6 miles N.W. of Lausanne. *Ouchy*, or *Ouché*, a village on the lake, to the south of Lausanne, has become of great importance, since the introduction of steam navigation, as the port of that city. In the western part of the canton is the high *vallée et lac de Joux*, traversed by the river Orbe, which passes through a subterraneous channel 2¼ miles in length.

VALAIS, in German WALLIS, or WALLISERLAND, is the largest of all the valleys of Switzerland, and is traversed through its whole length by the Rhone. Besides the main valley, there are 13 inhabited lateral valleys on the south side, and three on the north, with others that are not inhabited. It is surrounded by lofty mountains, and the only place where it can be entered on level ground is at St. Maurice, where, however, the passage is so narrow, that the gate of that town serves every evening to shut up the entrance of the valley; and here it is that the waters of the valley are carried off by the Rhone through a narrow gorge, between the Dent de Midi and the Dent de Morcles, which rise on each side at least 8000 feet above its level. This pass is named *Die pforte des Wallis;* and above it, the bottom of the valley rises gradually to the foot of Mount Furca, where the Rhone has its source at the height of 4626 feet above the level of the Lake of Geneva. In summer, owing to the narrowness of the valley and the height of its mountain walls preventing a free passage to the air, the heat in the Lower Valais, from Sion to Fouly, is so excessive, that Reaumer's thermometer rises in the shade to 24½°, and from 38° to 40° when exposed to the sun on the tops of the rocks. This part of the valley is quite inaccessible to the north wind; the E. S. and West winds alternately prevail. The Valais is indeed one of the most remarkable countries not only of Switzerland, but of Europe; for nowhere else can there be found so limited a district combining the productions and climates of every latitude, from the climate of Iceland to that of Sicily and Northern Africa, and offering so inexhaustible a variety of the most contrary objects, so rapid a transition from barren mountains and frightful precipices, to beautiful plains and luxuriant vegetation. In some parts of the Valais the harvest begins in May, but in others the corn is not cut till October. In some places fruit will not ripen, but in others the wild asparagus is seen to grow; the almond, the fig, and the pomegranate, to attain the highest degree of maturity; and, with hardly any labour or particular attention, the soil produces vines from which the most excellent wine may be made. In the mountain districts are found chamois, lynxes, dormice, wolves, sometimes hares, bucks, and many curious wild birds. The greater part of the Valais is inhabited by a population of a mixed descent from Celts, Romans, Gauls, and Burgundians. The people of the Upper Valais speak the old German of the fourteenth and fifteenth centuries, with little alteration; the language of the Lower Valais is a barbarous jargon of Celtic, Latin, Greek, and Italian-French. The former are a people full of energy, proud of their liberty, and distinguished for their sobriety, and extreme simplicity of manners; the latter, on the contrary, are reproached with idleness, negligence, and slovenliness. The Catholic religion is exclusively professed in the canton. The only articles of export are cattle, cheese, wine, lead, crystal, and cobalt.

Sitten, or *Sion*, the capital, is a small and very ancient episcopal city, with about 2500 inhabitants, not far from the right bank of the Rhone, in the Lower Valais. *St. Maurice*, a small town with 900 inhabitants, is, as already mentioned, the key of the Valais, and is situate on the left bank of the Rhone, 13 miles from its mouth. In its neighbourhood are several natural curiosities, particularly the *Pissevache*, a lofty waterfall of 300 feet. *Martinach*, or *Martigny*, near the confluence of the Dranse with the Rhone, is a small town, from which the road commences that leads over the Great St. Bernard by the valley of the Dranse. This famous mountain is crossed every year by more than 10,000 travellers, for whose accommodation and relief there is a Hospice, near the summit of the pass, kept by Benedictine monks; and is noted in modern history for the passage effected over it into Italy by the army of Buonaparte in the year 1800. In the church of the Hospice is a marble monument erected by Buonaparte to the memory of General Desaix, who was killed at the battle of Marengo. This Hospice is also famous for its dogs, which are kept by the monks for the aid and preservation of such travellers as may lose their way among the snow in severe weather. At *Brieg*, in the upper Valais, commences the still more famous route of the *Simplon*, constructed by order of Buonaparte, with great labour and expense, which leads into Italy by the Val d'Ossola. *Leuck*, a small town on the Rhone, between Sion and Brieg, is noted for its sulphureous baths; near which is *Albinen*, a

small village perched upon a perpendicular rock, which can only be ascended by means of eight enormous ladders placed one above another. On another side, a road cut partly in the rock, leads to the foot of the Gemmi, and over that mountain into the canton of Bern; being the famous *Passage de la Gemmi*, great part of which is cut in the face of a smooth perpendicular rock 1600 feet high. About 20 miles to the south of Leuck is the colossal *Matterhorn*, or *Mont Cervin*, the third highest mountain in Europe, being inferior in altitude only to Mont Blanc and Mont Rosa, which latter is a few miles to the eastward of the Matterhorn. To the northward of Brieg is situate the vast *glacier of Aletsch*, surrounded by the Breithorn, the Jungfrau, the Moneh, and the Finsteraarhorn. *Siders*, or *Sierre*, a small town on the Rhone, between Leuck and Sion, is the capital of the Ober-Wallis.

NEUCHATEL is a small canton, situate among the ridges of the Jura, between the lake to which it gives its name and the borders of France; and is composed of six or seven valleys, the principal of which are the *Val Travers*, the *Val de Sagne*, and the *Val de Ruz*. The soil affords excellent pasture, but produces few fruit-trees or leguminous plants. The sovereignty of the canton is vested in the King of Prussia, who is bound, however, by the constitution, to maintain it in all its ancient laws, customs, privileges, independence, and religious toleration. His influence, however, is very inconsiderable. He receives only the revenues of some domains, and a very moderate land-tax, which he cannot augment. Every profession and trade are free, no customs are levied, and no duties imposed on any goods which enter or leave the canton.

Neuchatel, or *Neuenburg*, the capital, is a well-built and thriving town on the slope of a hill, at the mouth of the Seyon, a torrent that runs through the Val de Ruz into the Lake of Neuchatel. It contains several remarkable buildings; particularly the chateau, the ancient residence of the princes of Neuchatel, the cathedral built in the twelfth century, the town-house, and the public hospital.—Population, about 5000. The other noted places in the canton are:—*Valengin*, a small town with 500 inhabitants, situate in the Val de Ruz; *Cortaillod*, a village on the lake, with a large manufactory of printed cloths; *Locle*, and *Chaux de Fond*, large and fine villages inhabited by lacemakers, watch and clock makers, jewellers, and manufacturers of mathematical and physical instruments. To the westward of these places is the valley of *Brevents*, traversed by the Doubs, which, at a place called the *Saut du Doubs*, has a fall of 80 feet, where it turns 12 mills, and a forge for making anvils. The Val de Travers, watered by the limpid Reuse, is about three leagues in length, and contains the beautiful villages of *St. Sulpice*, *Fleurier*, *Motiers*, *Travers*, and *Couvet*; and the *Temple of the Fairies*, a vast grotto full of magnificent stalaetites, and many other natural curiosities.

GENEVA is a very small canton at the south-western corner of Switzerland, almost entirely separated from the other cantons by the territories of Savoy and France. Though not naturally fertile, it has been rendered productive by the industry of its inhabitants. Three-fifths of the population are Calvinists; the remainder are Roman Catholics, under the spiritual jurisdiction of the Bishop of Fribourg. The sovereignty is vested in a representative council of 274, elected for nine years by the citizens; and the executive in a council of state, of 24 members, named by the representative council. The annual revenue amounts to about 2,000,000 florins, besides the municipal taxes of the city. For administrative purposes the canton is divided into 37 communes, in each of which there is a municipal council elected by the inhabitants, and a maire, who is appointed by the Council of State, and presides in the communal council. There are 41 elementary schools, attended by nearly 4000 children; and in the city there is an academy, or university, with four faculties, viz. theology, law, sciences, and belles lettres, taught by forty professors; schools for drawing and architecture, and mechanics; schools for music, gymnastics, watchmaking, &c.

Geneva, *Geneve*, or *Genf*, the capital, is situate on the slopes of two hills divided by the Rhone, where it issues from the lake, forming in its course two islands, on one of which stand part of the town, and the other contains a fine promenade planted with trees, and adorned with a statue of the noted Jean Jacques Rousseau. The two banks of the river, and the island, are now connected by a suspension-bridge; and a handsome quay, lined with fine buildings, has been constructed along the river. The streets are in general wide and commodious, except in the busy part of the town, where they are inconveniently narrow, and darkened by arcades. The churches are of a very ordinary description; the principal is that of St. Peter, an ancient edifice, with a modern colonnade. The town-house, the hospital, the museum of the fine arts, the museum of natural history, and that of the botanic garden, and the penitentiary, are the principal public buildings. The academy founded by Calvin may be considered as a university, in respect of the number of its professors, and the variety and importance of the branches of study. There is also a reading society, with a library of 30,000 volumes, and many other scientific and literary institutions. The citizens of Geneva are noted for their industry, as well as for their scientific and literary attainments. The most important branches of work are horologerie, or watch and clock making, and jewellery, in which they produce every year about 100,000 watches, and use about 60,000 ounces of gold, 5000 marks of silver, and £20,000 worth of precious stones. There are also several capitalists, who carry on banking and commercial speculations to a considerable extent.—Population, 26,000. The Rhone divides the town into two unequal parts, and flows from the lake in a remarkably limpid stream, of a fine sea-green colour. The climate is colder than that of Paris: Reaumer's thermometer falls in the severest cold to 14°, and even to 18° below zero, and rises in the greatest heat to 25° or 27°. The environs of Geneva are delightful, and intersected by many roads and paths that afford a great variety of the most agreeable walks, superb sites, and beautiful prospects. Within six miles of the town are:—the rural school of *Carra*, for 24 to 30 orphans; a magnificent lunatic hospital, built at the public expense, in a charming situation; *Chesne*, a fine large village, or rather two adjoining villages, with 3000 inhabitants; *Coligny*, another village on the banks of the lake, where several of the wealthy citizens have their country houses; *Carouge*, upon the Arve, a small town, with baths, a college, and about 3800 inhabitants; and *Versoy*, in a charming situation, with a harbour, on the lake. *Fernex*, or *Ferney*, the celebrated residence of Voltaire, is only five miles west of Geneva, and two miles within the French territory; but contains no object of particular interest. About 45 miles S.E. of Geneva is Mont Blanc, on the south side of the valley of the Arve, but within the duchy of Savoy, which forms part of the continental territory of the King of Sardinia.

BELGE, OR BELGIUM.

ASTRONOMICAL POSITION.—Between 49° 27′ and 51° 31′ North lat. and 2° 37′ and 6° East longitude.

DIMENSIONS. — The greatest length from N.W. to S.E. is about 195 English miles; and the greatest breadth, from N.E. to S.W. about 127 English miles. The superficial area is about 7,279,448 English acres, or 11,375 square miles.

BOUNDARIES. — *Northern:*—Holland. *Southern:*—France. *Eastern:*—Prussian territory of the Lower Rhine. *Western:*—German Ocean and France.

GENERAL ASPECT. — The southern borders of Belgium, which are a continuation of the Ardennes, and other ridges occupying the northern districts of France, are rather high and rugged; but, to the north, the country sinks into a flat plain, very little raised above the level of the sea; is traversed in every direction by numerous rivers and canals; diversified by woods, arable fields, and meadows, and thickly studded with towns and villages. The kingdom contains nothing that can properly be called a mountain, though there is a ridge of considerable elevation, extending through Luxemburg, Namur, and Liege, between the Meuse and the Moselle, and another along the northern banks of the Sambre and the Meuse, between Mons and Mæstricht. The country, in the northern provinces, along the rivers and estuaries, is, like that of Holland, protected from inundation by dykes; and along the open sea by sandhills, dunes or downs, which vary in breadth from one to three miles, rise to a height of fifty or sixty feet, and are in most places thickly covered with pine trees. The sea itself, to a great distance from the shore, is filled along the whole coast with sand banks, which render the navigation very intricate, and, to large ships, even dangerous.

STATEMENT of the AREA and APPROPRIATION of the PROVINCES of BELGIUM.

PROVINCES.	AREA IN ACRES.					
	Cultivated Land.	*Uncultivated Land.*	*Woods.*	*Buildings.*	*Rivers, Canals, and Roads.*	TOTAL.
Antwerp,	399,423	190,074	82,953	5,815	24,285	702,593
Brabant,	677,732	2,734	103,811	6,229	21,432	811,941
West Flanders,	675,474	18,005	80,414	7,200	18,981	800,078
East Flanders,	629,321	3,558	74,810	9,617	24,056	741,368
Hainault,	729,975	5,121	152,910	9,048	23,375	920,433
Liege,	505,221	45,767	136,785	4,091	23,616	215,485
Namur,	556,216	15,346	301,334	3,039	22,548	898,488
Limburg,	....	....	....	....	....	1,137,589
Luxemburg,	....	....	....	....	....	1,731,100
TOTAL,						8,459,069

Note.—The figures relating to the provinces of Limburg and Luxemburg are only approximations, as the authentic documents are not accessible. According to the recent treaty with Holland, their area is reduced approximately as follows:—Limburg to 593,520; and Luxemburg to 1,095,539. So that the area of the kingdom will now amount to 7,279,448 acres, or 11,375 square English miles.

RIVERS. — Belgium is one of the best watered countries in Europe; all its rivers flow to the North Sea.

The SCHELDT, in French ESCAUT, enters Belgium some miles above Tournay, flows through Hainault and East Flanders, and separates the latter from the province of Antwerp, below which it enters the Dutch territory, and flows through Zealand in several large branches, which are indeed rather arms of the sea than rivers. It is navigable for large ships to Antwerp, and to a considerable distance inland for smaller vessels. Its principal affluents are:—the *Dender;* the *Ruppel*, formed by the *Dyle*, *Senne*, and two *Nethes;* and the *Haine*, on the right; and the *Lys*, on the left.

The MEUSE, or MAAS, enters Belgium below Givet, and flows through Namur and Liege. Its principal affluents are:—the *Semoy*, *Lesse*, *Ourthe*, and *Roer*, on the right; and the *Sambre* on the left.

CLIMATE. — In climate, the Belgian provinces differ from each other chiefly in respect of their humidity, though, generally speaking, the climate is less chilly and damp than that of Holland. In Luxemburg, the climate is temperate and healthy, more moist than cold. The oak, the ash, and the beech, abound in its beautiful forests; horses and cattle find plentiful pasturage; and a species of vine, which yields an indifferent wine, is cultivated. Fruit trees, however, are rare; and wheat succeeds with difficulty; but great advantage is derived from the cultivation

of rye and oats, and particularly of potatoes. In Liege the atmosphere is often hazy; the valleys, fertile and well cultivated, and in addition to the productions of Luxemburg, yield wheat of excellent quality; and the country generally abounds with forests, and is equally rich with the other in game, swine, and beeves. In Namur the air is sharp and healthy; the soil is extremely various, and readily admits of cultivation; the sheep produce finer wool than those of the other provinces, and their flesh is much more juicy. In Hainault, the atmosphere is equally healthy, the climate is equally temperate, the same fertility is observable, and the forests, though more scattered, produce excellent timber for the carpenter. East and West Flanders have a moist climate, and in some places are subject to malaria, which occasions dangerous fevers; the summer is warm and rainy, and the winter cold. The north-west winds, indeed, often render the winter formidable by the inundations which they occasion. Both of these provinces produce horses which, though too dull for riding, are well adapted for draught. The other domestic animals are remarkable for their excellent condition, for which they are indebted to the rich pastures. The plants which succeed best in Flanders are tobacco, hemp, madder, and particularly flax, which is the staple production of the country. These provinces are destitute of forests, but abound with turf, which supplies the inhabitants with fuel. The provinces of Brabant and Antwerp are also moist but healthy, and their soil is particularly fertile. Limburg is marshy, but the rearing of cattle and the culture of bees are carried on to great advantage.

Geology and Mineral Productions. — In the elevated south-eastern districts strata of red sandstone and limestone containing organic remains overly granite, quartz, and slaty schists. Towards the north-west these strata contain vast beds of anthracite, which form a basin of forty miles round Namur. The rock strata of Hainault consist of three distinct formations; the first or lowest, composed of porphyry and quartz; the second, of calcareous earth, coal, and schists; and the third, of argillaceous earth, with deep beds of sand and other matter. East and West Flanders, Antwerp, and the northern part of Brabant consist chiefly of horizontal strata of white, yellow, and grey sand and clay mixed in different proportions, and in some places contain thick beds of peat or turf, which supplies a cheap fuel. Various other kinds of vegetable and animal remains, both terrestrial and marine, are found over all this part of the kingdom, a proof that it has been, at no very remote epoch, a part of the bed of the sea. At the mouths of the rivers there are vast deposits of river alluvium, which, in process of time, has formed the islands of Zealand, and great part of Holland. The principal mineral production is coal, which is found most abundantly in the neighbourhood of Mons, Charleroy, and Liege; there are also considerable mines in Namur and Limburg. A great field of the coal formation, resting on mountain limestone, extends from Aix-la-Chapelle to Douai, forming a series of irregular basins, the most considerable of which are those of Liege and Charleroy, which are separated only by a small ridge of limestone. The number of the coal-beds has been reckoned by M. Dumont as high as eighty-three. Iron mines are also numerous, particularly in the region between the Sambre and the Meuse. Copper is found in Hainault and Liege; lead in Liege, Namur, and Luxemburg; zinc in Namur and Hainault; manganese in Liege; pyrites, calamine, sulphur, and alum in Namur and Liege. Namur, besides coal, likewise produces carbonate of lime, flint, clay for porcelain as well as common pottery and pipes, and a species of sand adapted for the manufacture of crystal. Flanders contains abundance of clay for the manufacture of tiles, bricks, pottery, and pipes; and the western part of that province, and of those adjoining it on the south-east, contain excellent materials for building, as freestone, limestone, granite, paving slabs, slates, and marble; excellent millstones, grindstones, and whetstones, are supplied from the quarries of Liege and Luxemburg. There are also in Belgium several mineral springs; as those of Spa, near Liege, which are celebrated throughout Europe; those of Chaudfontaine in the same neighbourhood; those at Morimont near Namur; and at Tongres near Maestricht.

People. — The Belgians consist of two distinct stocks, — the *Germanic* and the *Græco-Latin*. To the former belong the proper Belgians or Netherlanders, who speak the Flemish tongue; and a small number of German-Dutch, mostly in Limburg and Luxemburg. To the latter belong the *Vallons* or *Walloons*, who inhabit the higher or southern part of the country, and speak the French-Flemish, and the Vallon, two dialects of the French language. Though nineteen-twentieths of the Belgians are Roman Catholics, and exceedingly devout, yet their piety does not make them gloomy and morose. They have fifteen holidays in the year, besides Sundays; and these they devote partly to dancing and out-of-door amusements.

Statement of the Population of each Province of Belgium, distinguishing the Inhabitants of Towns and of the Country, on the 1st of January in each of the years 1816 and 1837.

Provinces.	1816.			1837.		
	In Towns.	*In Country.*	*Total.*	*In Towns.*	*In Country.*	*Total.*
Antwerp,	98,051	196,692	294,743	125,632	234,548	360,180
Brabant,	128,811	315,962	444,773	167,142	425,108	592,250
West Flanders,	137,293	384,171	521,464	165,884	461,244	627,128
East Flanders,	140,962	480,805	621,767	180,145	478,761	658,906
Hainault,	109,806	383,791	493,597	81,096	550,727	631,823
Liege,	73,671	287,767	361,438	88,926	301,789	390,715
Limburg,	52,903	237,528	290,431	41,324	289,981	331,305
Luxemburg,	31,209	185,468	216,760	15,693	307,526	323,219
Namur,	20,220	145,889	166,109	33,849	193,225	227,074
	793,009	2,618,073	3,411,082	899,691	3,342,909	4,242,600

If the proportion of the population of the Dutch portions of Limburg and Luxemburg be the same as their area, the population of the kingdom of Belgium will be reduced to 3,965,686, as in 1837.

As above stated, there are various languages spoken in the Netherlands. The far greater portion of the inhabitants of both the northern and the southern provinces are of Deutsch origin, and their vernacular language is chiefly composed of Teutonic words. It is divided into several dialects, namely the Dutch, the Flemish, and the Brabant. The two latter have been little cultivated; few books have been written in them, except books of devotion, the lives of saints, almanacks, and spelling-books. The number capable of reading them is very small in comparison with the whole population, but with the inhabitants of the country these dialects are the general medium of intercourse. During the French dominion, great pains were taken to extend the use of the French language; and it is now spoken by all above the lowest classes, and is also the official language of Government. The Walloon language, a corrupted dialect of the French, is commonly used in Hainault, Liege, and Namur; and the Deutsch or German prevails in Luxemburg. Baron de Keverburg, taking the population of 1829, gives the statistics of the language as follows: —

I. *Languages of Teutonic Origin.*

Antwerp, Limburg, and Flanders,	1,971,056
The largest part of Brabant,	380,177
One-half of Luxemburg,	151,317
	2,502,550

II. *Walloon and French.*

Hainault, Liege, and Namur,	1,124,595
The arrondissement of Nivelles, in the province of South Brabant,	126,733
One-half of Luxemburg,	151,317
	1,402,645

Religion. — The Roman Catholic is the established religion; the clergy are numerous and influential, and the people ignorant, bigoted, and superstitious; but all other religions are tolerated. On 1st January 1837, the number of Catholics was 4,216,755, and of Protestants, only 6,033. The Catholics are under the charge of one archbishop (of Malines), and five bishops (Bruges, Ghent, Liege, Namur, and Tournay.) The archbishop's salary is £4,017; the salaries of the bishops, from £2,252 to £3,092. The number of curés, or parish priests, of the first class, is 81; of the second class, 165; inferior clergy, 4,422, whose allowance varies from £8 to £30. All these salaries are paid out of the public treasury.

Education. — The educational institutions are of three kinds, — the primary schools, the colleges or secondary schools, and the universities. By the new Belgian constitution, education ceased to be compulsory; and the Government has no control over it, except as regards the schools in the pay of the State; the rest depends upon the pleasure of individuals, and the caprice of the communal councils; and there is no longer any normal school in existence. In short, education in Belgium seems to have retrograded since the Revolution. At least one-third of the rising generation are absolutely without any regular instruction. The provinces of Luxemburg and Namur

are those in which instruction is the most widely diffused, and the two Flanders and Liege those in which it is least attended to. Belgium, when compared with other countries in respect of the diffusion of instruction, stands just below Austria, and is merely above England. It is several degrees above France and Ireland, but falls very far short of Holland, Switzerland, Prussia, Bavaria, Scotland, and the United States of North America. The colleges, or *athenees*, established in all the large towns, are maintained principally by the inhabitants, but receive some aid from the State. The classics, modern languages, history, geography, and the mathematical and physical sciences are taught pretty much upon the Dutch system. Besides these, there are other colleges for general education, under the exclusive management of the clergy. The Jesuits alone have established four, — at Brussels, Namur, Alost, and Ghent. These institutions are intended to compete with the *athenees* in the education of all classes, and, it may easily be conceived, are conducted with a more marked religious bias. They are also distinct from the theological seminaries, established in each dioccse, for the special training of the priesthood. To this branch of education belong also the schools of industry, painting, music, &c., which are numerous and well attended. The universities are four, — two supported by the State, at Liege and Ghent; the Catholic university of Louvain, founded by the clergy; and the free university of Brussels, established by a private association. The total number of students attending the four, in 1837-8, was 1203. The freedom of university education is almost as great as that of the schools. Degrees, however, can only be conferred by the central body, called "Le jury d'examen," at Brussels, composed of members of the several universities, from whom the jury, which assigns the university honours, is selected. The students both of the private and the State universities are obliged to resort to this central jury for their degrees; but beyond this, their systems of education are not subjected to any standard or uniform rule.*

Government. — The kingdom of Belgium was established in 1831, and the Government is a constitutional hereditary monarchy vested in the person and family of Leopold, Prince of Saxe Coburg. The legislature is composed of a Senate and a Chamber of Representatives or Deputies. The number of deputies is regulated by the population, and cannot exceed the proportion of 1 deputy to 45,000 inhabitants. The deputies are elected for four years, and the senators for eight years, by citizens paying a direct tax, which is fixed by the electoral law; the requisite sum cannot exceed 100 florins, nor be less than 20. One-half of the Chamber of Representatives is renewed every two years, and of the Senate every four years. The Chambers assemble by their own right every year on the second Tuesday of November, unless convoked earlier by the King, who has the power of convoking, adjourning, or dissolving them; and in the case of a dissolution, the whole members of both Chambers require to be re-elected. The executive government is vested in the King, assisted by six responsible ministers, namely, a minister of justice, of the interior, of foreign affairs, of public works, of war, and of finance. The expenses of the King's civil list are fixed at £110,053, besides the appropriation of the royal edifices. The judicial system is almost entirely the same as that of France, upon which it has been modelled.

The total revenues of the kingdom, for 1838, amounted to 94,606,326 francs (£3,941,930 sterling), derived from the following sources: — Land-tax, 18,261,226 francs; personal tax, 8,272,000; patents, 2,833,600; rent of mines, 115,500; customs, 9,000,000; excise, 10,970,000; bullion, 150,000; stamps, 8,550,000; domains, forests, &c., 10,786,000; tolls, post, canals, 6,080,000; capital and revenues of railroads, forests, &c., 9,295,000; reimbursements, 2,264,000; sundries, 29,000. The total expenditure for the same year amounted to 95,291,052 francs (£3,970,460.) The interest of the public debt, in 1841-2, amounted to 18,652,314 francs, or £1,554,360 sterling, which, calculated at five per cent, would show a debt of £31,087,200. Of these sums, however, more than a half consists of that part charged to Belgium, of the debt of the late kingdom of the Netherlands.

Military Force.—The army is composed of one picked regiment of 5 battalions; 12 regiments of infantry of the line, forming 48 battalions; 3 regiments of foot chasseurs, forming 12 battalions; 2 regiments of horse chasseurs, forming 12 squadrons; 2 regiments of lancers, forming 12 squadrons; 2 regiments of cuirassiers, forming 8 squadrons; 1 regiment of guides, forming 6 squadrons; and 4 regiments of artillery, forming 43 batteries, besides artillery train, pontooners, &c.,—the whole amounting to about 90,000 effective men. The Netherlands, or Low Countries, as they were called (*Neyderdaytschland*), having been, during the 17th and 18th centuries, the

* *Foreign Quarterly Review*, October 1839.

principal battle-field of Europe, most of the towns were fortified to such a degree, that the country may be said to have bristled with fortresses of the first rank. Most of the fortifications, however, have been demolished, or allowed to fall into decay; the principal fortresses now remaining are Namur, Tournay, Charleroy; the citadels of Antwerp, Ghent, and Liege; and the seaport towns of Nieuport and Ostend.

Productive Industry. — The Belgians have been long distinguished for their industry, the principal productions of which are: — The lace of Brussels, Mechlin, Bruges, Ghent, St. Tron, &c.; the cloths of Flanders, Brabant, and Hainault; the printed cottons of Ghent, Brussels, and other places; the bleaching establishments of Courtray, which rival those of Haarlem; the carpets of Tournay; the papers of Liege; the cloths of Verviers; the tanneries of Liege and Ghent; the pottery of Tournay; the military arms and cutlery of Liege, Namur, and Charleroy; the goldsmithwork of Ghent, Brussels, and Antwerp; the books and prints of Brussels; the iron, steel, copper, and brass works of Namur and Liege; the steam-engines of Seraing near Liege; and the brasswork of Louvain and Brussels. Mines of iron, lead, copper, and coal, are worked in the provinces of Liege, Namur, Hainault, and Luxemburg. There are considerable breweries at Brussels and Louvain; and sugar-refineries at Ghent and its neighbourhood; but there are no distilleries in Belgium of any importance. With respect to agricultural industry, it may be remarked, that it has long been distinguished for productiveness and variety; and that the Flemish system of farming has been noticed and recommended for its excellence by the most experienced British agriculturists. The industry of the Flemings has within 200 years converted a tract of land, originally a sandy and barren heath, into a rich and beautiful garden; and the produce of its wheat is often not less than 16 to 1, and of oats 20 to 1; while scarcely in any part of Britain does wheat yield more than from 8 to 10 for 1. Nine-elevenths of the soil is under actual cultivation, and about twice the quantity of corn required for home consumption is annually produced. The small cultivators are in tolerably easy circumstances, and this flourishing state of agriculture operates favourably upon manufacturing industry, every branch of which is in full activity. Flax is one of the principal products, and brings a high price in the foreign market, on account of its excellent quality. It is raised principally in Flanders, Brabant, and Hainault. East and West Flanders alone produce annually flax to the amount of £1,600,000. The linen of Flanders is also still held in high esteem.

The coal mines of Hainault alone produce more than those of the whole of France, and the annual quantity raised in Belgium exceeds 2,600,000 chaldrons. The iron mines of Liege, Limburg, and Luxemburg, were never before worked so extensively as now. More than 150,000 tons of iron are annually founded. The cloth manufacture, in which, at Verviers alone, 40,000 workmen are engaged, employs in its various branches a capital of three millions sterling. The linen manufacture, principally in Flanders, gives employment to 400,000 persons, and the value of the annual produce is estimated at £4,500,000 sterling. The cotton manufacture, notwithstanding the loss of the Dutch colonial markets, has steadily improved since 1830, and now represents a capital of £3,000,000 sterling at least. The lace and silk manufacturers are also thriving.

Commerce. — From the beginning of the present century up to the period of the late revolution, the trade of Belgium had been greatly increasing; it was considerably diminished by that and the subsequent events, but is again rapidly and steadily improving. The principal exports are the productions of its flourishing agriculture, and numerous manufactures; such as corn, beer, coal, oil, lace, woollen and cotton cloths, linen, canvas, arms, cutlery, and ironmongery. The principal imports consist of colonial produce, and the wines and fruits of the south of Europe. Of late years the bookselling business has been carried into an immense extent, particularly in Brussels, where a single printing-house will now produce as much in a week as all the presses in the city used to produce in a year, during the French domination. This extraordinary increase is chiefly owing to the dishonest practice of printing immediately, in a cheap and commodious form, all the best new works that are published in France, to the great injury of both the authors and the publishers of that country. The principal commercial towns in the kingdom are: — Brussels, Ghent, Liege, Namur, Tournay, Ypres, Mons, Louvain, Verviers and Malines or Mechlin. The principal seaport towns are Antwerp, Ostend, Bruges, and Nieuport. Belgium likewise possesses several large banking establishments, which are of great service to the manufactures and commerce of the country.

Internal Communication.—Belgium is intersected in every direction by excellent roads, which are generally wider and more regular than those of England, and infinitely better managed than those of France. The roads of the first and second classes are made and upheld by the state; provincial roads, by the provinces; and the smaller byeways, by the communes. Several new state roads are in the progress of formation, and a great number of provincial roads have also been planned and undertaken.

Sometime after the accession of King Leopold, he ordered the whole country to be surveyed by able engineers; the necessary plans and estimates were formed; and on 1st May 1834, a law was passed, according to which a system of railroads was to be introduced through the whole kingdom, and executed at the public expense; and so rapid has been the progress of the work, that by the end of 1838 the following sections of railroads were opened:—

Sections of Railroad.		*Time of Opening.*	*Length,*	
From	*To*		*In French Metres.*	*In Eng. Miles.*
Brussels,	Malines,	May 5, 1835,	20,300	12.6
Malines,	Antwerp,	May 3, 1836,	23,500	14.6
Malines,	Termonde,	Jan. 2, 1837,	26,700	16.5
Malines,	Louvain,	Sept. 10, 1837,	23,750	14.7
Louvain,	Tirlemont,	Sept. 22, 1837,	17,750	11.0
Termonde,	Ghent,	Sept. 28, 1837,	30,500	18.9
Tirlemont,	Waremme,	April 2, 1838,	27,200	16.8
Waremme,	Ans,	April 2, 1838,	18,900	11.7
Ghent,	Bruges,	Aug. 12, 1838,	44,500	27.6
Bruges,	Ostend,	Aug. 28, 1838,	23,500	14.6
			256,600	159.0

According to the report made by the minister of public works to the Chambers on 26th November 1838, these ten sections, including buildings, locomotive engines, and cars, cost £1,360,000. The railroad from Brussels to Antwerp, 27.2 miles, has a double track; the remainder are constructed only with single tracks. The portion from Brussels to Liege has been since finished; and the extremely low charges have increased the number of passengers in an unparalleled degree, and produced an intercourse which has scarcely been attained in any other country. These railroads afford to the government the greatest facility in the transport of troops. In conformity with the grand idea of their establishment, they yield only the interest of the capital, and a sinking fund; but the State treasury has, by the increase of intercourse, indirectly gained in taxes, and in the revenue from tolls on turnpike roads, and from the mail. The most important gain, however, has been that kept in view by the great founder of these roads,—to bring the nation into a more intimate contact, and to form of it one large family, in which the national device, "L'Union fait la force," may become realized.

Belgium likewise contains a great number of canals, the aggregate length of which amounts to 460,220 metres, or 286 English miles, besides 952,760 metres, or 593 miles of navigable rivers. The principal canals are:—The *Northern Belgian Canal*, commenced under the French domination, and lately finished, which unites the Scheldt with the Meuse, extending from Antwerp to Venloo, a distance of 32½ miles. The *Canal of Liege*, undertaken by a company established at Brussels before the revolution of 1830, for the junction of the Meuse with the Moselle, and extending from Liege to Treves, a distance of 174 miles. The *Canal of Charleroy and Brussels*, 46 miles long, with 55 sluices, and a tunnel of 1300 metres (4265 feet.) The *Canal between Mons and Conde*, 11 miles long. The *Canal of Brussels*, which forms the communication between that city and Antwerp. The *Canal of Ostend*, which connects that seaport with Ghent, passing Bruges, and is one of the most ancient and most remarkable.

Administrative Divisions.—The kingdom is divided into nine provinces, which are subdivided into arrondissements, communes, and cantons, on the model of the division of France. In each province there is a governor directly amenable to the minister of the interior, for the purpose of superintending and enforcing the execution of the laws; and each arrondissement is superintended by a commissary, under the governor. The provinces and communes have also provincial and communal councils to manage their own local affairs; the members of which are elected by the citizens qualified to elect the national representatives. The extent and population of the provinces have been stated already; the following table therefore only contains their names, with a list of the principal towns in each.

Provinces.	*Cities and Towns.*
South Brabant	Brussels, Laken, Anderlecht, Meulebeek, Halle, Vilvorde, Louvain, Tervueren Diest, Tirlemont, Nivelles, Waterloo, Wavre, Cambre, Braine-Lallen, Tubize Aerschot.
Antwerp	Antwerp, Lillo, Boom, St. Bernard, Malines or Mechlin, Lier or Lierre, Turnhout Hoogstraten, Geel, Wortel.
East Flanders	Ghent, Waersehoot, Oudenarde, Renaix or Ronse, Grammont or Geeraerdsbergen, Ninove, Termonde or Dendermond, Rupelmond, Alost or Aalst, Wetteren, Zele, Lokeren, Tamise, St. Nicolas, Eeeloo, Beveren, Hamme.
West Flanders	Bruges or Brugge, Dam, Blankenberg, Ostend, Thielt, Furnes or Veurne, Dixmude, Nieuport, Ypres or Yperen, Poperinghe, Warneton, Courtray, Comines, Werwiek, Roulers or Rousselaer, Menin.
Hainault, or Henegouwen	Mons or Bergen, Hornu, Jemmappes, Frameries, Dour, Quaregnon, Wasmes, Enghien, Soignies, Tournay, Lessines, Ath, Fontenoy, Beaumont, Braine-le-Comte, Fontaine l'Eveque, Peruvelz, Charleroy, Fleurus, Marchienne, Binche, Thuin, Chimay.
Namur	Namur, Andenne, Dinant, Bouvignes, Gemblonx, Rochefort, Boneiche, Han-sur-Lesse, Philippeville, Couvin, Marienbourg, Florennes.
Liege	Liege, Luik or Luttich, Herstal, Chaudfontaine, Herve, Abbaye-de-la-vallee-de-St. Lambert, Gloris, Seraing, Dalhem, Verviers, Theux, Limbourg, Spa, Stavelot or Stablo, Huy.

Provinces.	*Cities and Towns.*
Limburg.....	Hasselt, Faquemont or Valkenburg, Maseyck, Tongres or Tongern, St Tron or St. Truyen, Bilsen, Looz.
Luxemburg.....	Arlon, Mersch, Neufchateau, Bastogne, Bertrix, Bouillon, Marche-en-Famine, St. Hubert.

Cities and Towns.

Brabant.—Brussels (Bruxelles), the capital of the kingdom, is situate partly on the low banks of the Senne, and partly on a declivity which rises from the river. The lower part, which is the least healthy and least regular, contains many houses built in the gothic style; but the quarter next the Park has wide straight streets and elegant houses. The houses are built of stone, and form altogether a remarkably fine town. The *Place Royal*, and that of St. Michel, both adorned with fine buildings, are the principal squares. The city is besides adorned with several fine wells,* and possesses public walks of rare beauty; that of the Park, enriched with fine statues, is considered to be one of the finest in Europe; the Green Walk *(Allee Verte)* has three avenues more than a mile long, extending to the Bridge of Lacken; and the Boulevards, formed, like those of Paris, upon the site of the ancient ramparts now demolished. The upper part of the town is by far the finest, and consists almost exclusively of the elegant mansions of the gentry, the best hotels, the palaces, senate-house, and other buildings of the better sort. At the north-eastern side of the Park is situate the senate-house, and opposite to it, at the south-west side, is the royal palace; and at the south-east corner, is the palace of the Prince of Orange, a large building finished only about a year before the revolution of 1830 deprived his Royal Highness of the use of it. The city contains a number of other public buildings, among which the town-house and the cathedral are the most worthy of notice. The town-house is an ancient gothic fabric, with a beautiful tower and spire, 364 feet high, surmounted by a statue of St. Michael standing upon the point as a vane. It was erected in 1441, and contains the hall in which the Emperor Charles V. abdicated his throne in 1555. The cathedral, or Church of St. Michael and St. Gudule, is another ancient gothic fabric, with two towers which are seen at a great distance. We may mention also:—the old palace of the Austrian government, now used for the museum and library; the Palais de Justice; the great Civil and Military Penitentiary; the magnificent greenhouses of the Horticultural Garden; the Observatory, which is one of the best in Europe; the hospital for the aged, a large and fine building just finished; the entrepot; the corn-market; the Mont de Piété; the magnificent mansion destined to receive collections of the fine and the useful arts and of scientific productions. A great number of scientific institutions add to the importance of Brussels, such as:—the Academy of Science and Literature; the Royal Society of the Fine Arts; the Society Concordia, for the cultivation of national literature; the Botanical or Floral Society; the Musical Society; the Athenæum or Royal College; the Upper School of Trade and Industry, &c. The city carries on a very active trade, and serves as the general mart to all the kingdom for objects of taste and luxury. It communicates with the Scheldt by a canal, which is sufficiently deep and wide for ships of 300 tons; for whose accommodation there is a basin large enough to contain 400 sail. Brussels is no longer the seat of the tapestry or carpet trade, for which it was once so eminent; but it still produces a number of miscellaneous articles, particularly lace, which no other place can match. The business of printing and publishing has for sometime formed one of the chief trades of Brussels; and the piracy of foreign literary works is carried to a very great extent by its publishers.—Population about 100,000. To the north of the city is *Lacken*, a fine village, with a magnificent palace, where the King passes the fine weather. The other remarkable places in the province are:—

Louvain, a large and fine town, said to have contained in the fourteenth century, so many as

* "One of these, remarkable for the irreverent idea of its composition, is situate at the corner of the Rue de l'Etuve. It has been called the MANNEKEN PIZ—puer qui mingit, and represents the figure of a naked child in bronze, of excellent workmanship, supplying the requisite *filet d'eau*. This fountain is celebrated all over Flanders, and held in such reverence, that whenever a religious procession takes place, in which the Host is promenaded under a baldaquin through the streets, escorted by the military, and preceded by a great concourse of priests and monks, followed by a still greater number of the inhabitants; the little fellow is dressed up for the occasion, in a laced coat and cocked hat, a sword, the *cordon rouge*, with a proper contrivance in his dress for the continuation of the act which he never ceases to perform, even during the passing of the religious procession. The statue is the production of the celebrated sculptor Duquesnoy. It bears also the name of the oldest burgher of Brussels. The Archduke Maximilian, and Louis XV. made a present to it of several sumptuous suits of clothes; and the latter went so far as to bestow upon it the cross of the order of St. Louis. Several citizens have left legacies to it; and there is actually a valet de chambre belonging to the little gentleman, who is well paid to dress him on every gala day."—*Dr. Granville's Journal of Travels to and from St. Petersburg*, I. 50.

200,000 inhabitants, whose number is now reduced to 26,000. Its cloth manufactures, which then employed 100,000 persons, are now inconsiderable, but its brazieries have acquired a high degree of prosperity. Louvain has been long celebrated for its university, which, during its flourishing period, was considered the first in Europe. Suppressed during the French domination, it was restored by King William, and has already recovered not a little of its ancient celebrity. Among the principal buildings are the town-house, one of the most interesting monuments of gothic architecture; the buildings of the university; the church of St. Peter; the Fraseati, a building for balls and spectacles; and the great prison. *Nivelles, Waterloo, Genappe, Belle Alliance, Quatre Bras, Wavre,* the forest of *Soignes*, &c. all to the south and south-east of Brussels, are noted for the great battle fought there in June 1815, when Napoleon was utterly discomfited. A monument, in the form of a conical hill 200 feet high, surmounted by the Belgian lion in bronze, has been erected near Waterloo to commemorate the event. *Vilvorde*, north of Brussels, a small town on the Senne, with 3000 inhabitants, and a large correction house; *Diest*, with 6000 inhabitants; *Tirlemont*, 8000; *Halle*, 5000; *Tubize*, 2000.

Antwerp.—ANTWERP (ANTWERPEN of the Dutch, ANVERS of the French), a large and fine city on the right bank of the Scheldt, which is navigable for the largest ships up to the quay. It is strongly fortified by walls and ditches; and at the south-west side of the city is the famous citadel, where the Dutch maintained an obstinate defence against the French in 1832. The whole country round is perfectly flat. The interior of the town consists of streets generally narrow, lined with high houses of a sombre antique appearance; and, although some of the streets contain houses of a modern style, and there are some good shops, yet the air of the whole place is decidedly dull and monastic. The finest building in the city is the cathedral church of Notre Dame, one of the largest and finest specimens of gothic architecture now existing in the Netherlands; commenced in 1422, and finished in 1518. It contains two pictures by Rubens, the Elevation of the Cross, and the Descent from the Cross, which are and have long been the principal objects of attraction to strangers. Externally, the church is adorned with one of the finest gothic steeples in existence, found by late measurements to be 466 feet high, equal to that of Strasbourg cathedral, and consequently one of the highest in Europe. The other principal buildings are:—the church of St. James, remarkable for its extent and its architecture; the town-house; and the Bourse (Exchange), an elegant rectangular building. Antwerp possesses likewise several important scientific establishments. The trade of the city, though still considerable, is but the shadow of what it was during the sixteenth century, just before the revolt of the Netherlands. It was then the principal mart of the commerce of Europe. Thousands of ships of all nations crowded its port; its population amounted to 200,000 souls; and the treasures of the universe were accumulated in its warehouses. The manufacturing industry of the citizens had, at the same time reached its highest degree of prosperity. Every thing, however, was ruined by the terrible siege which it maintained against the Prince of Parma in 1585, and a bar was put to its recovery by the closing of the Scheldt, one of the conditions of the peace of Westphalia in 1648, in favour of the Dutch. The river was opened again by Napoleon, with the intention of making Antwerp a great naval arsenal; for which purpose he construeted on the north side of the city a magnificent dock, and dockyard, which still remain. The prosperity of Amsterdam was founded upon the ruin of Antwerp; and the restoration of the latter has already had, and promises still more to have, a mischievous influence upon the other; and there is little doubt that the increasing prosperity of Belgium, and the opening of the great railway, will ere long revive in no small degree its commercial importance. Indeed the number of ships that now enter the port is considerably greater than it was at any time during the union with Holland. In 1829 the number of ships was 1031—tonnage 138,945; in 1837 the number of ships was 1426, with a tonnage of 225,759.—Population of the city about 70,000. The navigation of the Scheldt below Antwerp is commanded by several forts, of which that of *Lillo* is the principal; and opposite the city, on the left bank of the river, is a small fort, the *Tête de Flandres*. *Mechlin* or *Malines*, nearly midway between Antwerp and Brussels, a fine town containing 24,000 inhabitants, with numerous manufaetures of lace, hats, cloth, &c., a fine cathedral, and an archiepiscopal seminary. The archbishop is primate of Belgium. *Lierre*, a town with 13,000 inhabitants, situate at the confluence of the two Nethes, and noted for its brass-foundries, and manufacture of copper musical instruments. *Boom*, a town with 5000 inhabitants, a great part of whom are employed in ship-building and brick-making. *Turnhout*, a flourishing town with 13,000 inhabitants. *Geel*, a town with 7000 inhabitants, noted for its college, and for the number of *fous* (idiots) sent thither from all parts of the kingdom, who live as boarders with the inhabitants, whose principal wealth has long depended upon this strange employment.

East Flanders.—GHENT or GAND (anciently *Gaunt*) a large episcopal city, at the confluence of the Lys with the Scheldt, which, with the Lieve and the Moere, divide it into several islands connected by a great number of bridges. Ghent is the ancient capital of Flanders, and, prior to the days of Spanish oppression, was as wealthy and populous as Antwerp. It was then distinguished as the chief seat of the cloth manufacture on the continent, and contained 40,000 weavers. These formed the strongest and boldest corporation in Europe, and were long distingnished for their invincible love of freedom. The revival of the town is of recent date. In 1801, the cotton manufacture was introduced by a native who had learned the art at Manchester, and has succeeded remarkably well. There are now a number of cotton factories driven by steam power; and the situation of the city upon canals which bring the raw material to the very doors, the large population, and the cheapness of living, render it a very suitable place for this or any other kind of manufacture on a large scale. The town now exhibits a strange spectacle of cotton spinneries, with their tall brick chimnies placed amidst rows of antique buildings, and old gloomy churches and monasteries. The cathedral, or Church of St. Bavon, dates from the 13th century, and is enriched with 24 chapels, carved stalls and sculptures in marble, executed in a style of exquisite beauty; and near it is an ancient belfry, surmounted by a gilt dragon brought from Constantinople during one of the crusades, by the citizens of Bruges, from whom it was stolen by the people of Ghent, during one of their petty wars. One of the most singular places in the city is the Beguinage, a large inclosed conventual establishment, in which there were lately 600 inmates, who are a sort of nuns that devote themselves to the duty of sick-nurses, and are to be found wherever there is sorrow or suffering. Ghent contains a university founded in 1816 by King William of the Netherlands, which occupies a very elegant new building; a botanic garden, a school of arts, and several other literary and scientific establishments. By its canals and rivers, it has a navigable communication with Terneusse, Antwerp, Brussels, Tournay, Courtray, Bruges, and Ostend; and in the centre of the town there is constructing a beautiful basin, which will be deep enough for ships of 800 or 900 tons, and capable of containing 400. It communicates with the sea by the canal of Terneusse.—Population, 84,000. *St. Nicholas*, a town of 16,000 inhabitants, with extensive manufaetures of cottons, ribbons, pins, &c., an academy of design, architecture, and music, and an agricultural and botanical society. *Beveren*, a town with 6000 inhabitants, who are noted for their industry. *Rupelmonde*, a small town with 2500 inhabitants mostly employed in brickmaking. *Deynse*, 3000 inhabitants. *Oudenarde*, 5000. *Eeeloo*, 7000. *Lokeren*, 16,000. St. Nicholas, Beveren, and Lockeren, are well situated in the Waesland, one of the best cultivated districts of Belgium. *Renaix*, a town of 12,000 inhabitants, with several hat manufactories. *Alost*, a trading town of 15,000 souls, with a royal society of eloquence. *Hamme*, a large town with about 9000 inhabitants, situate in the richest part of the Waesland.

West Flanders.—BRUGES, the capital, is situate upon the canal that reaches between Ghent and Ostend, and communicates by other canals with Ecluse and Nieuport; it has a spacious basin, to which ships can come with full sail by the excellent canal. This fine and large city, which, towards the end of the 13th century, was one of the principal marts of trade in the world, now presents only a shadow of its ancient splendour; but its hall, Church of Our Lady with its fine tower, the town-house, the episcopal palace, and other remarkable buildings, as well as its manufactures, commerce, and ship-building yards still entitle Bruges to be considered one of the most important towns in the kingdom. It is now connected with Ostend and Ghent by the great railway, and has a population of 41,000 inhabitants. *Ostend*, a small fortified seaport town, with a tolerable harbour, and connected by canals with Bruges, Ghent, Nieuport and Dunkirk. It has also a fine sea-bathing establishment which attracts a great number of strangers.—Population, 11,000. Ostend enjoys great reputation with the Parisian gourmands for exquisite green oysters; *huitres vertes d'Ostende*. *Nieuport*, a small fortified town on the sea-coast, with 3000 inhabitants. *Poperinghe*, with 10,000 inhabitants, and *Ypres*, with 15,000, *Menin*, *Warneton*, each about 5000, are noted for manufacturing industry. *Courtray*, a large town with 19,000 inhabitants, is also noted for its manufactures, bleaching-works, and extensive commerce. *Roulers*, a busy town with 9000 inhabitants.

Hainault.—MONS, or BERGEN (Anglicé HILLS), the capital of the province, is a strongly fortified city, partly situate upon a height.* It contains a college, a school of medicine, and other scientific and literary institutions; and in the neighbourhood are numerous and important coal mines. *Jemmappes*, a town with 3000 inhabitants, is noted for the battle fought in 1792, between the French and Austrians, where young Egalité (now King Louis Philippe of France) first distinguished himself. *Enghien*, a small busy town with 4000 inhabitants. *Charleroy*, a fortified town on the Sambre, with more than 4000 inhabitants. *Tournay*, considered the most active manufacturing town in the kingdom. Among its numerous productions the principal are carpets, camlets, and porcelain. It is also a bishop's see.—Population, 29,000. About three miles S.E. of Tournay is *Fontenoy*, noted for the defeat of the British army by the French under Marshal Saxe in 1745. About 10 miles to the S.W. of Mons, but beyond the frontier, is *Malplaquet*, the scene of one of Marlborough's battles fought in 1709.

Namur.—NAMUR, the capital of the province, an episcopal city of 19,000 inhabitants, with a strong castle upon a hill, at the confluence of the Sambre with the Meuse. It is noted in history as an important object in the wars of King William and Queen Anne of England, and in modern times for its manufactures of military arms and fine cutlery, its tanneries and potteries. It is still strongly fortified. *Dinant*, a small town with 4000 souls, noted for its quarries of stone and marble; at *Herbemont*, a little to the west, is the most important slate quarry in the kingdom, producing annually above 8000 slates. *Philippeville*, a strong town of 1200 inhabitants, with iron mines in its neighbourhood. On the north-eastern border of the province is the scene of the battle of *Ramilies* fought in 1706.

Liege.—LIEGE, LUIK, or LUTTICH, capital of the province, a large episcopal city at the confluence of the Ourthe with the Meuse. Its inexhaustible coal-mines, which have been worked since 1178, its numerous forges, royal cannon-foundry, manufactures of arms, ironmongery, tanneries, cloth manufactures, glass and crystal works, and its extensive commerce, render it one of the most important places in the kingdom, if not in Europe. It is built with little regard to regularity along the Meuse and the Ourthe, across which there are several bridges, and partly up the sloping bank to the west of the former. It contains a university, founded by King William, which has 46 professors, and is attended by from 400 to 500 students. The population of the city is estimated at 62,000; but it is also surrounded by a large population who are engaged directly or indirectly in mining and manufactures. The valley of the Meuse and the hills that bound it are rich in mines of ironstone, zinc, lead, copper, sulphur, alum, and coal; also in quarries of marble and slate. The iron manufacture is the staple of the district. While Namur manufactures goods like those of Sheffield, Liege produces articles similar to those of Birmingham. Steam-engines and machinery are now made to a great extent in Liege and its vicinity; but principally at *Seraing*, an establishment situate two or three miles up the valley, on the banks of the Meuse, and belonging to the eminent John Cockerill; and which, with steam-engines of not less altogether than 1000 horse power, and 3000 workmen, sends forth daily for use 25 tons of machinery of every description. The other noted places in the provinces are:—

Heristal, or *Herstal*, a town with 6000 inhaaitants, noted for its numerous ironworks, and as having been the ordinary residence of Pepin-le-Gros, the great-grandfather of the Emperor Charlemagne. The *Abbey of the defile of St. Lambert*, formerly remarkable for the magnificence of its buildings, and the beauty of its gardens, is noted now for its glass-works, where crystal, demi-crystal, and other sorts of glass are manufactured to the value of £22,000 a-year. *Glons*, a small town with 2000 inhabitants, is the centre of the straw-hat manufacture, which employs about 6000 people in the provinces of Liege and Limbourg. About 1,500,000 hats are made annually, amounting to the value of above £80,000. *Dalhem*, a small town of 900 inhabitants, with cloth manufactures. *Herve*, with 3500 inhabitants, noted for cheese. *Verviers*, a large town with 19,000 inhabitants, is noted for its numerous manufactures of cloth and casimeres, and its forges, where steam-engines are made. *Theux*, a town with 3000 inhabitants, noted for its foundry, its manufactory of bars and sheet iron, and its quarry of black marble, one of the finest in Europe. *Limburg*, a small cloth manufacturing town with 2200 inhabitants. *Spa*, a small town with 3500 permanent inhabitants; but its mineral waters, celebrated throughout Europe, attract annually from 2000 to 3000 strangers. The water issues from seven different springs; is perfectly clear, but, after standing, gives a slight deposit of ochre. It has an acid irony taste, and continually emits gaseous bubbles. Its temperature is 40° Fahrenheit, and its specific gravity, 1.00098. The scenery of the neighbourhood is very picturesque. *Huy*, a town on the Meuse, with 7000 inhabitants, noted for their industry. It has iron and coal mines in its neighbourhood. *Looz*, or *Borchloeon*, a very small town with a fine castle. *St. Tron*, a town with 8000 inhabitants, great part of whom are employed in making lace of great beauty, and in the manufacture of arms. *Tongres*, a town of 4000 inhabitants, with mineral waters in its neighbourhood. *Bilsen*, a small town with 3000 inhabitants.

Belgian Luxembourg.—*Arlon*, a town of 3300 inhabitants, with foundries in its neighbourhood. *Bouillon*, a small fortified town with 2600 inhabitants, the capital of an ancient duchy of the same name

* Its fortifications are to be, if they have not already been, demolished.

HOLLAND.

Astronomical Position. — Between 50° 45′ and 53° 28′ N. lat.; and 3° 23′ and 7° 28′ E. long.

Dimensions.—Holland is situate along the south-eastern coast of the North Sea, and extend in its greatest length from N.E. to S.W. about 190 English miles; its greatest breadth from east to west is about 123 English miles. The superficial area is 7,614,252 English acres, or 11,897 English square miles.

Boundaries. — *Northern:* — The North Sea, or German Ocean. *Eastern:* — Hanover and Rhenish Prussia. *Southern:* — Rhenish Prussia and Belgium. *Western:* — the German Ocean.

General Aspect. — The most ancient accounts of Holland represent it as an extended swamp, alternately covered and abandoned by the waters of the ocean. Even in the first century of the Christian era, it appears not to have been destitute of inhabitants, who subsisted on the produce of the sea, and endeavoured to fix their habitations on any spot of ground which was left uncovered by the waves. It is perhaps impossible to ascertain the period at which they began to protect themselves against inundations by the erection of dikes; but for many centuries they have maintained a successful contest with the ocean, which has ended in the country being brought to its present state of high cultivation, and comparative safety. A great part of Holland is calculated to be between 20 and 40 feet below high water mark on the adjoining coast, yet the inhabitants seem nevertheless to live without fear. At various times, however, the sea has burst its barriers, and on these occasions the effects have been most disastrous. (*Anté*, p. 70.) In connexion with the building of dikes, the importance of draining the land by means of canals and ditches would naturally suggest itself; and accordingly, to such an extent has this improvement been carried, that the country is now intersected with them in every direction. The canals are indeed innumerable, and of great utility in facilitating internal trade, and in travelling; and, being lined with rows of trees, they tend to beautify the country, which is naturally flat and uninteresting. The country is so flat, that to those approaching it along the rivers, and some parts of the coast, the trees and spires seem to rise out of the water.

Along the coast of the North Sea there is a line of broad sand-hills or downs, partially covered with grass or heath, and in some places so high, as to shut out the view of the sea even from the tops of the spires. These appear to have been formed by a natural process which is still going on. During the prevalence of sea-winds, clouds of sand are raised from the beach into the air, and showered down upon the country for at least a mile inland; to secure it from proceeding too far, the sandy ground is in some places sown with bent grass, and in a few spots fir-trees have been planted, and continue to grow. These downs, where they exist, form a complete barrier against the encroachments of the sea; and it is therefore to the banks of the rivers, and those parts of the coast where there are no sand-drifts to form downs, that the attention of the Dutch is principally directed. There, dikes, or bulwarks of earth, have been constructed, and are carefully kept in repair; and across the country in all directions low mounds have been formed to enclose sections of land, or fields, called *polders*, which are surrounded and intersected by ditches, into which the water runs, and from which it is drawn off by pumps worked by wind-mills, and carried along the tops of the dikes to the main canals which intersect the country on a level with the sea.

In consequence of so much water, and its unsheltered exposure to the sea breeze, the climate of Holland is humid and foggy; but, during winter, which lasts four months in the year, and covers the ground with hoar-frost and ice, the east wind, which frequently prevails, dissipates the unwholesome miasmata. The industry of the people has multiplied cattle and pasture grounds; and, though the country does not present the agreeable variety of an irregular landscape, yet in the fine seasons it is not devoid of charms. Vast meadows, dazzling with the richest verdure, are, during eight months of the year, covered with cattle, whose high condition attests an abundant and wholesome nutriment. In the north, wheat, flax, and madder are raised, and in the south, where agriculture has made the greatest progress, tobacco and different kinds of fruit-trees cover the fields.

STATEMENT of the AREA and APPROPRIATION of the LAND, in each PROVINCE of HOLLAND, in 1833.

PROVINCES.	*Cultivated Land.*	*Uncultivated, including Roads, Open Places, Walks, Ramparts, &c.*	*Water, including Rivers, Brooks, Lakes, Canals, Ponds, Morasses.*	*Heaths, Seashore, Riverbanks, Downs, Reed and Rush Lands, Peatbogs, &c.*	TOTAL.
North Brabant,.....	296,811	12,757	22,262	179,843	511,673
Gelderland,.....	323,912	9,692	9,305	165,723	508,632
North Holland,.....	182.666	3,620	17,209	44.500	247,995
South Holland,.....	257,792	2,039	19,643	24.143	303,617
Zealand, ...	164,232	2,393	3,623	3,534	173,782
Utrecht, ...	113,204	706	2,461	22,191	138,562
Friesland,.....	264,708	2.812	23,067	36,746	327,333
Overyssel,.....	204,369	3,155	3,402	123,003	333,929
Groningen,.....	182,292	2,159	2,748	45,977	233.176
Drenthe,.....	136,379	1,391	445	128,056	266,271
TOTAL,.....	2,126,365	40,724	104,165	773,716	3,044,970

Note.—The figures are Dutch *bunders*, each equal to 2.4736 English acres; and the total amount is 7,614,252 acres, or 11,897 square miles.

RIVERS.—The RHINE, from Germany, enters Holland in a single stream, but soon divides into two great branches, the *Rhine* and the *Waal;* the latter of which flows past Nimeguen, and joins the Maas near Gorcum. The Rhine, to the east of Arnhem, sends off another branch to the northeast, which joins the Yssel, and flows onward to the Zuider Zee at Kampen. It then flows westward to Wyk le Duerstede, where it again divides; one branch, bearing the name of the *Old Rhine*, flows past Utrecht and Leyden, and enters the sea by a sluice at Katwyk; the other, under the name of the *Leck*, joins the Maas, to the eastward of Rotterdam; and forms between it and the Waal the island of *Betwé*, the ancient *Insula Batavorum*, or *Island of the Batavians.*

The *Maas*, or *Meuse*, flows through Limburg and North Brabant, joins the Waal near Gorcum, and then divides into two principal channels, one of which flows onward to the sea by Rotterdam, while the other passes through the Biesbosch and Hollands-deep, and forms two estuaries between the islands of Schouwen and Voorn, divided by Goree and Over Flackee.

The *Amstel*, which gives its name to Amsteldam, or Amsterdam, situate at its mouth upon the Y, an inlet or arm of the Zuider Zee, is properly only a branch of the Rhine; the *Vecht* in Drenthe, the *Aa* and the *Hunse* in Groningen, and the *Merk* in Brabant, may also be mentioned.

LAKES AND MARSHES.—The lakes are numerous, particularly in Friesland, Groningen, and Overyssel; but they are generally of small extent. The *Haarlemmer meer*, or *Lake of Haarlem*, in North Holland, is, however, of considerable extent, being 15 miles in length by 8 in breadth. It communicates with the Zuider Zee by the Y, and is everywhere navigable; but its navigation is much impeded by squalls and storms. It was formed by an inundation of the sea, about three centuries and a half ago, and is separated from the North Sea by a neck of land about five miles broad. It has been long in contemplation to drain it. The *Biesbosch*, in North Brabant, is a lake of about 36 square miles in extent, formed in the year 1491, by an irruption of the sea, which overwhelmed 72 villages, and 100,000 people. The marshes occur chiefly in North Holland, Friesland, Groningen, Overyssel, and Drenthe; some of them are very extensive. The *Bourtang*, in Groningen and Drenthe, and the *Peel*, in South Brabant and Limburg, appear to be the largest. Several marshes have been drained, and their beds are called *polders*, one of the most considerable of which was once occupied by the Lake of Naarden.

CANALS AND ROADS.—As already mentioned, the canals are innumerable; but several of them are deserving of particular notice. The *North*, or *Great Ship Canal*, in North Holland, commenced in 1819, and finished in 1824, at the cost of nearly £1,000,000 sterling, connects the port of Amsterdam with that of Nieuwdiep, near the Helder, and is large enough for ships of war and the largest merchantmen, being 125 feet wide at top, 38 at bottom, and 21 deep. It is about 50 miles in length, and was intended to enable ships sailing to and from Amsterdam to avoid the circuitous and often dangerous navigation of the Zuider Zee. Its service to Amsterdam is incalculable, for without it that city would soon have sunk into comparative insignificance. The *Zederik Canal* extends from Vianen on the Leck to Gorcum on the Maas, and shortens by eight days the passage between Amsterdam and Cologne. The *Canal* of *Zuid-Williems-Waast* connects Bois-le-Duc with Maestricht, and admits barks of 800 tons burden. In Groningen and Friesland, a great canal extends from the Ems past Groningen and Lecuwarden to Harlingen on the Zuider Zee. In almost all the provinces, and particularly in Holland, the towns communicate by canals, as they do elsewhere by roads; these canals being traversed by treckschuyts, which pass to and fro at fixed hours. The roads, which are among the best in the world, are broad, running for miles in straight lines along the tops of the dikes, and are paved with small bricks set on edge, so as to be very smooth for carriages. They are also usually ornamented with a row of trees on each side; but the whole transport of goods and farm produce is carried on by the canals, which form the chief thoroughfares. Railroads are also projected.

SEAS, GULFS, &c.—The *Zuider Zee* (*i.e. South Sea*, so called to distinguish it from the *North Sea*, or German Ocean) is a great gulf that divides Friesland, Drenthe, and Gelderland, from Holland and Utrecht. The southern part of it appears to have been originally a lake, the barrier between which and the sea was broken through by an inundation in the year 1225. It is much encumbered with sand banks, and subject to severe storms. The *Dollart*, a similar gulf between Groningen and Hanoverian Friesland, was formed likewise by an irruption of the sea in the year 1277. In South Holland, and Zealand, there are five estuaries communicating with the Maas and the Scheldt.

ISLANDS.—*Walcheren, Schouwen, South Beveland, North Beveland, Tholen*, and others, in Zealand; *Goree, Over Flackee, Voorn, Beierland, Ysselmond*, and others, in South Holland; *Texel, Vlieland, Ter-schelling, Ameland, Schiermonnick, Borkum*, opposite the mouth of the Zuider Zee and the coasts of Friesland and Groningen; *Wieringen, Urk, Schokland, Marken*, in the Zuider Zee.

PEOPLE.—The inhabitants of this kingdom belong principally to two stocks;—the

Hollanders, or *Dutch*, who form the great bulk of the population, including the German people of Limburg, belong to the German stock; and the *Frisons*, who occupy some of the cantons of Friesland, and the neighbouring islands. A few *Walloons*, of the Græco-Latin stock, are found in Limburg and some other localities. The Dutch are proverbial for their frugality, persevering industry, and attention to business; and their country is a monument of these good qualities. "The Dutch," says a late traveller, Mr. W. Chambers, "are a sagacious and most respectable people; their orderliness, industry, and cleanliness are beyond all praise; they are, however, at present not an advancing, or, on the whole, a thriving people. What may be the true cause of this, it would perhaps be presumptuous in me to say. My impression is, that there is little genius or enterprise amongst them; at least they seem to have no idea of readily adopting and employing mechanical expedients with the view of enlarging the bounds of manufacturing industry, while their inordinate self-esteem as a nation prevents them from imitating those who are fit to set them an example. Satisfied with their usages, their industry, and all that belongs to them, they remain the same yesterday, to-day, and for ever. Their towns never seem to grow any larger, their canals and roads are what they were a hundred years since, and, excepting some little additional energy in education, I am not aware of any advance they are making on a general scale. In short, they are a nation in stereotype, a work upon which few or no corrections or improvements can be permitted."

RELIGION. — There is in Holland no dominant religion; and people of all professions are allowed full freedom of worship. The majority, however, are Calvinists, with a regularly constituted ministry. The Lutherans are next in number; the Mennonites and Remonstrants are also numerous; but all these sects taken together do not amount to half the number of the Calvinists. The ministers of all the sects are maintained by the Government, which also defrays the expense of the Universities, of which there are three — Leyden, Utrecht, and Groningen. These are indiscriminately resorted to by all the sects, whose theological studies are provided for by the State, under professors of their own faith.

EDUCATION. — The Dutch possess an excellent system of elementary education. The law which ordained the institution and regulation of primary schools, was one of the last acts of the Batavian republic, and promulgated in 1804; but it was not till 1814 that it came into full operation. The law is remarkably complete in all its details and provisions relative to the establishment of schools, the appointment of teachers, and the course of instruction. The great object kept in view is the education of every child in the country in the simple branches of secular knowledge; and this appears to be accomplished in a manner the most satisfactory to all classes of the people. The working of the law is committed to general and local inspectors, and boards of management; and no teacher is allowed to exercise his profession till he has been twice examined, once as to general qualification, and a second time in reference to his appointment to a particular school. There are no corporation academies, and very few schools in which Latin is taught. The better class of schools are conducted by teachers at their own risk. Next below these in rank are the Tusschen, or intermediate schools, at which the children of tradesmen and others above the lowest condition, are taught on the payment of small fees. Below the Tusschen are the Armen, or poor-schools, at which the teaching is gratuitous. The law does not compel parents to send their children to school; but the poor are not allowed any relief from public funds unless they send their children to the Armen schools; and the result is, that there are none without education. The most remarkable peculiarity of the system is the separation of religious from secular education, the duty of inculcating religious truths to the young of their own flocks being left to the clergy and ministers of the sects to which they belong.

GOVERNMENT. — The Government is a constitutional monarchy, very nearly resembling that of France. The King shares the legislative power with the States-General, which are divided into two Chambers: the *first* composed of not less than 40, nor more than 60 members, nominated for life by the King, from among those who are most distinguished for their services, their birth, or their fortune; the *second* composed of 116 deputies, who are elected by the people of the provinces every three years. These take the title of *Hoghen Moghen*, or High and Mighty Lords, or, as their predecessors used to be called in English, High Mightinesses, and are assembled once a-year at least. Each province has, besides, its own States, composed of members chosen by the three orders, viz. the nobility, or equestrian order; the inhabitants

of the cities and towns; and the country population. The provincial states assemble once a-year at least, and as often as they are convoked by the King. The government of the colonies is vested exclusively in the King.

FINANCES.—The public revenue is derived principally from a land-tax, excise duties, and customs, besides various smaller branches. The estimated amount of revenue for 1843 was 65,853,457 florins; of expenditure, 70,156,511 florins. The public debt amounted to 1,253,944,850 florins, or £102,063,260 sterling; and the yearly interest upon it, to 43,670,000 florins, or £3,612,076.

ARMY AND NAVY.—The peace establishment of the army consists of 1 regiment of grenadiers, 1 of foot chasseurs, 10 of infantry; 2 of heavy cavalry, 2 of light dragoons, 2 of lancers; 2 battalions of field artillery, 1 battalion of volunteer artillery, 1 corps of flying artillery, 3 battalions of militia artillery, 2 companies of artillery workmen, 1 division of pontooneers, 1 battalion of artillery drivers; and 1 corps of sappers and miners, forming 2 battalions. The navy, at 1st June 1841, consisted of 8 ships of the line, with 55 frigates and smaller vessels, mounting, altogether, 2274 guns; besides 1 exercise vessel, 6 war steamers, 6 transports, &c.

PRODUCTIVE INDUSTRY.—During the union of Belgium with Holland, the former country had extended its manufacturing industry, and possessing a more favourable situation, had prevented the Dutch from re-establishing the manufactures of woollen and linen goods which had flourished before the occupation of the country by the French. At present, the manufactures of Holland are upon a narrow scale. Some linen is made, with a few woollen and cotton goods, but chiefly for domestic consumption. A few articles of tapes and other small wares are made at Haarlem; and some linen is still bleached there, which is either made in the country, or imported from Silesia. The business of refining sugar is carried on extensively in Amsterdam, and the manufacture of snuff and tobacco gives employment to numerous labourers. Gin is made to a vast extent at Schiedam and other places; the breweries are also large and numerous. The building of ships, barges, and boats is now the chief branch of manufacturing industry; and in the beauty of their form, in durability, and adaptation for stowage, the builders have, of late years, made rapid progress. The greatest deficiency in Holland is the want of employment for common labourers; for although, in the season of harvest, there is not a sufficiency of hands for the work of the field, and thousands come from Westphalia to gather in the crops, yet at other seasons the distress is very great, and in no country is there so much call for the practice of benevolence, and nowhere such abundant exercise of that virtue.

The fisheries on the Dutch coasts, as well as those on the shores of Great Britain, and the Greenland whale-fishery, employ many seamen; but this is chiefly a summer labour, and that class of workmen feel much distress in winter, especially whenever, as is a common occurrence, the canals are frozen, and cease to be navigable. There are altogether about 80 vessels employed in the herring-fishery, most of them belonging to *Vlaardingen* and *Maas-sluis*, two places on the Maas, below Rotterdam.

The agriculture of Holland is well conducted. Wheat is but little cultivated; the cultivation of rye is more extensive; but the most profitable grain is oats, of which more is exported than imported. Barley is but little grown, and what is needed is chiefly supplied from Germany. In the recently cultivated poor lands of Groningen and Drenthe, much buckwheat is grown; potatoes are also produced abundantly. The more beneficial products are those from the cattle, such as butter, cheese, bacon, and hams; and on the farms where they are maintained, are raised the greater part of those seeds from which their oil is made.

COMMERCE.—Although the trade of Holland has greatly declined from its flourishing state in the sixteenth century, it is still considerable, and much improved since the restoration in 1814. The principal imports consist of grain, salt, wine, building timber, lean cattle for fattening, millinery (*chiffons*), iron, and other raw materials for manufactures, besides sundry manufactured articles for the commission trade. The latter is a very important branch of Dutch commerce, as well as that of exchange, which produces a very considerable annual profit to their bankers. The flower trade is still flourishing, but the whale-fishery and herring-fishery are now only a shadow of what they were in former times. The principal exports consist of linen, cheese, butter, salt fish, paper, salted meat, spices, and other produce of the East and West Indies, madder, tobacco, smoking-pipes, flowers, oil, gin, seeds, hides, borax, and camphor. The principal trading towns are:—Amsterdam, Rotterdam, Middelburg, Flushing, Briel, Dort, Enkhuizen, Zieriksee, Groningen, and Utrecht.

ADMINISTRATIVE DIVISIONS.—The kingdom of Holland is divided into ten provinces, which are subdivided into districts, and the latter into cantons. Besides these, there are those portions of Limburg, and of the Grand Duchy of Luxemburg claimed

by both Holland and Belgium, but which will now definitively remain with the former. Luxemburg, however, is not a part of the kingdom of Holland, but only belongs to the King in his capacity of Grand Duke, and is properly a part of the Germanic Confederation.

Provinces.	*Population, Jan.* 1, 1841.	*Cities, Towns, &c.*
NORTH HOLLAND,..	448,328	Haarlem, AMSTERDAM, Hilversum, Amstelveen, Naarden, Saardam, Hoorn, Edam, Medenblick, Enckhuizen, Alkmaar, Helder, Willemsord, Nieuw-diep; the islands of Texel, Vlieland, Ter-Schelling, and Wieringen.
SOUTH HOLLAND,..	532,394	The HAGUE, Scheveningen, Katwyk, Leyden, Rotterdam, Vlaardingen, Maaslandsluis, Delfts-haven, Schiedam, Delft, Gouda, Schoonhoven, Dordrecht or Dort, Gorcum, Briel, Helvoetsluis.
ZEALAND,.....	152,847	Middelburg, Vlissingen (Flushing), West-kappelle, in Walcheren; Sluis, or l'Ecluse; and Goes, in South Beveland; Hulst, Axel, Sasde-Gand; Zieriksee, in Schowen; Tholen.
NORTH BRABANT,..	382,154	Hertogensbosch (Bois-le-Duc, or Duke's Wood); Ravenstein, Grave, Tilburg, Breda, Oosterhout, Gertruidenburg, Moerdyk, Bergen-opzoom, Eindhoven, Oirschot, Helmont.
UTRECHT,.....	146,029	Utrecht, Zeyst, Amersfort, Soest, Veenendael.
GELDERLAND,.....	350,288	Arnhem, Nieuwkerk, Harderwyk, Loo, Zutphen, Doesburg, Nimwegen, Sten Andries (St. Andrews), Thiel, Kuilenburg.
OVERYSSEL,.....	200,718	Zwoll, Ommerschanz, Kampen, Zwart-Sluis, Deventer, Almelo.
DRENTHE,.....	73,777	Assen, Meppel, Coevorden, Frederiksord.
GRONINGEN,.....	177,951	Groningen, Winschoten, Nieuwe-Schanz, Appingedam, Delf-zyl.
FRIESLAND,.....	231,137	Liewerden, or, Leeuwarden, Franeker, Harlingen, Dokkum; the islands of Ameland and Schiermonikoog, Snits or Sneek, Bolsward, Herrenveen.
LIMBURG,.....	198,143	Maestricht, Gulpen, or Galoppe, Sittard, Vaels, Stefenswerd, Ruremond, Weerdt, Venloo.
LUXEMBURG,.....	160,680	Luxemburg, Diekirch, Echternach.
	2,893,716	

If the proportion of the population of the Dutch portions of Limburg and Luxemburg be the same as their area, the sum will be — Limburg, 128,450; Luxemburg, 118,664; making the total population of the kingdom, 2,860,385, in 1838; but by census on 1st January 1840, the total population of the kingdom was found to be: — males, 1,399,680; females, 1,459,431; total, 2,859,111, including the garrisons.

CITIES AND TOWNS.

North Holland.—AMSTERDAM, the principal city of the kingdom, though not the capital, is situate on the south bank of the river Y or Ai, at the mouth of the Amstel, which divides it into two parts. It is, besides, intersected by many canals, which form upwards of 90 islands, communicating by 290 bridges, some of which are of stone, and others of wood. The streets, almost all straight, and built along canals, are well paved, have footpaths, and are well lighted at night. The two finest, called the Heeren-gracht, and the Kaisers-gracht, in the middle of the city, are magnificent, and of considerable length; but the houses that line them are all built of brick, and painted of divers colours. Amsterdam is the seat of the general administration of the marine, whose vast magazines and building-yards are truly remarkable. It contains a great number of scientific and literary establishments. The most remarkable buildings are: — the Stadthouse, now the royal palace, a magnificent modern structure; the town-house, formerly the Admiralty; the East India House, the West India House, the Exchange, the Arsenal, the Great Barracks, the *Oude-kerke*, *Nieuw-kerke* (old church and new church), the Haarlem gate, the quays, and the vast basins or docks. After the closing of the Scheldt in 1648, all the trade of the Indies centered in Amsterdam, and made it one of the most flourishing cities in the world. But the decline of the republic, the re-opening of the Scheldt, and the rising importance of Antwerp and Roterdam, have very much reduced it. The new canal, however, and the railroad, which will connect it with the principal places of the kingdom, and of the adjoining countries, will probably restore it to a considerable degree of prosperity. The population exceeds 220,000 souls. Commerce is the prevailing object of pursuit with its citizens, there being few manufactures here or elsewhere in Holland. Of all the routes through Holland, whether by land or water, none is more agreeable than that which leads from Amsterdam to Utrecht. It is, so to speak, an uninterrupted series of fine country houses and gardens. In spring nothing finer can be imagined, than the ever-varying appearance of these magnificent gardens: here the traveller perceives a rustic garden, with charming groves; there, parterres enriched with tulips, hyacinths, and all the other treasures of the Dutch flora. *Haarlem*, the capital of the province, 12 miles W. of Amsterdam, is a large but thinly peopled town of 22,000 inhabitants. Its principal buildings are: — the town-house, one of the finest in the kingdom, and formerly the residence of the Counts of Holland; the church of St. Bavon, remarkable for its size, its elegant tower, and its organ, which contains 8000 pipes; and the Prinees' Hotel, where the States of Holland used formerly to assemble. Haarlem is noted for its bleachfields, wax-works, tissues of wool and silk, typefoundries, and particularly for its gardens, which produce an immense quantity of flowers, the material of a considerable trade. It possesses several scientific and literary establishments, and disputes with Mentz the honour of the invention of printing. The environs are distinguished for magnificent gardens, and superb country houses. *Saardam*, or *Zaardam*, to the west of Amsterdam, at the mouth of the Zaar, where it falls into the Y, is a large town with 10,000 inhabitants, noted for its paper, the best in Holland, the neatness and elegance of its wooden houses, its shipbuilding yards, and about 1000 windmills. It was here that Peter the Great of Russia spent some time, for the purpose of learning the art of shipbuilding. The house he occupied still remains, and the building which covers it was visited and repaired by the Emperor Alexander. *Brock* or *Brock*, a town in the Waterland, north of the Y, noted for the wealth and the extreme neatness of its inhabitants, and of their houses, furniture, streets, &c. The last are paved with varnished tiles, and have the appearance of being covered with Turkey carpets. No animal is allowed to enter the town for fear of dirtying them. *Alkmaar*, a fortified town, with 9000 inhabitants, on the North Canal, is the greatest mart for cheese in the kingdom. *Hoorn*, or *Horn*, a large well-built town, with a harbour, on the Zuider Zee. Its shipbuilding establishment and great butter trade make it a place of some importance. — Population, 10,000. *Enkhuizen*, also on the Zuider Zee, with 7000 inhabitants, chiefly engaged in the herring fishery. *Medenblik*, a small seaport town of 2000 inhabitants, with a royal marine institute, where every science necessary for seamen is taught by seven professors. *Helder*, a town with 1600 inhabitants, at the northern extremity of the province. A little to the eastward is *Nieuw-diep*, a large harbour,

newly built, at the termination of the great northern canal. *Purmerend*, a small town with 3000 inhabitants. *Edam*, a seaport town on the Zuider Zee, with 3500 inhabitants, and a great trade in cheese. *Muiden*, a small fortified town with 1000 inhabitants, and *Naarden*, also a fortified town, with 600 inhabitants, both to the east of Amsterdam, with which Naarden communicates by a canal. North-west of Alkmaar is the small town of *Kamp*, off the downs of which (*Camperdown*) was fought a great naval battle between the British and the Dutch fleets in 1797.

South Holland.— The HAGUE, called by the Dutch S'GRAVENHAGEN (pronounced *Sgravenhaugh*), and by the French LA HAYE, situate near the sea-coast, 32 miles S.W. of Amsterdam, is reckoned one of the best-built cities in Europe. It is intersected with canals; its streets are wide, straight, and paved with brick; and its squares are covered with fine plantations. Among the principal buildings are distinguished:—the King's palace, more remarkable for its size than its beauty; the palaces of the States-General, and of the Prince of Orange; the town-house; the corn-exchange; the new temple, &c. The Hague possesses scientific and literary establishments of the highest importance; the principal of which is the Royal Museum, the lower rooms of which contain a unique collection of rare objects, particularly of Indian, Chinese, and Japanese art, utensils, costumes, books, money, &c. The upper rooms contain the picture-gallery, which is one of the richest in Europe; the royal library, very rich in manuscripts and historical works; the collection of medals, and a fine collection of cameos. The Hague is the seat of government, and of the supreme court of justice of the kingdom. It possesses a porcelain manufactory, a large cannon-foundry, a copperplate-foundry, and about 60,000 inhabitants. Near it is *Ryswick*, a castle where a treaty of general peace was signed in 1697; *'t Huis in den Bosch* (the House in the Forest), or simply *Bosch*, a royal pleasure-house, in the recesses of a fine forest; *Little Loo*, a superb royal palace, with delightful walks; *Scheveningen*, or *Scheveling*, a village on the sea-shore, the summer resort of all the fashionable people of the Hague, for sea-bathing. At the entrance of the walk which leads to Scheveningen, is a fine villa, with large gardens, where the celebrated physician George Heyne of Wurtzburg has established his orthopedique institution. *Leyden*, a very ancient city (the *Lugdunum Batavorum* of the Romans), upon the Old Rhine, about six miles from the sea. It consists of a number of islands, intersected by canals which are bordered with trees, and is surrounded with ditches and walls opening into the country by eight gates. The general appearance of the town is pleasing; and the number of handsome houses and venerable looking buildings give it an air of importance. Leyden is noted for its university, founded in 1575, formerly much resorted to by students from all countries, and possessing fine collections of objects of nature and art, a library of 60,000 volumes, and 14,000 manuscripts. The city is not populous in proportion to its extent, but still contains about 35,000 inhabitants. West from the city a cut has been made to carry the Rhine forward to the sea, which it now enters by a sluice near the village of *Katwyk-op-zee*. The country round Leyden is reckoned the most fertile in the lower part of Holland, and is termed the *Rhynland*.

Rotterdam, a large and fine town, 20 miles from the sea, on the north bank of the Maas, at the mouth of the small river Rotte, with a great trade, and containing 72,000 inhabitants. It is, after Amsterdam, the most populous and most commercial city in the kingdom, and most advantageously situate; vessels of the largest size being not only able to come up the river, but even to approach the warehouses in the heart of the town, by means of canals. With most of the other towns in the kingdom it communicates by canals, and with Germany by the Rhine, of which indeed the Rotterdam branch of the Maas is the principal mouth. The town is well paved and clean, the houses handsomely built, and every thing appears to indicate an active and prosperous commerce. Upwards of 200 vessels now enter the port annually, and of these above 70 are Indian and Chinese traders, of from 500 to 700 tons burden each. Except the Stadt-house, a large modern structure, there are no remarkable public buildings; but the quay, called the Boomtjes, presents a long line of handsome houses.

Schiedam, a large town with 10,000 inhabitants, who are chiefly employed in the large gin-distilleries and in the herring-fishery. *Dordrecht*, or *Dort*, a town with 17,000 inhabitants, upon an island in the Merwe, noted for the synod assembled to put down the Arminians in the 17th century. *Delft*, upon the Schie, a considerable, but old-fashioned and decayed town, with 13,000 inhabitants, is much noted for its earthenware, and a great arsenal. In its principal church is the fine mausoleum of William Prince of Orange, the founder of Dutch independence in the sixteenth century; also the tomb of Hugo Grotius. *Delftshaven*, a seaport town with 3000 inhabitants, upon the Merwe, is the port of Delft. *Vlaardingen*, noted for shipbuilding, and the great number of vessels which it sends to the herring-fishery.—Population, 6000. *Gouda*, a large town with 12,000 inhabitants, noted for cheese, numerous gin-distilleries, manufactures of pipes and pottery, and for its fine sluices. *Briel*, a seaport town, much frequented, near the north side of the island of Voorn. *Helvoetsluis*, a fortified seaport town, with 2000 inhabitants, on the south side of the Voorn. *Willemstadt*, *Schoonhoven*, and *Oudewater*; the last important for its vast plantations of hemp; the second for its harbour; and the first for its fortifications, situate upon the south side of the estuary of Hollands-diep. *Gorcum*, on the Merwe, a small fortified town with 5000 inhabitants. *Vianen*, on the Leck, a small town with 2000 inhabitants. *Maaslandsluis*, a large and flourishing fishing town with 5000 inhabitants, upon a branch of the Maas.

Zeuland.—MIDDELBURG, the capital of the province, is situate near the centre of the island of Walcheren, and communicates with the sea by a large navigable canal. It is a very busy commercial town. *Flushing*, on the south side of Walcheren, a strongly fortified town, with a fine harbour, magnificent docks, vast building-yards, and immense magazines. *Zieriksee*, in Schouwen, a town of 6000 inhabitants, with a harbour, on the East Scheldt; a busy trading place, noted for excellent oysters, of which great quantities are exported. *Goes*, a seaport town with 4500 inhabitants, in South Beveland. *Sluis*, or *l'Ecluse*, a very strong place with 1200 inhabitants, situate on the mainland, on a gulf of the North Sea, and communicating by a canal with Bruges. *Sas-de-Gand*, another fortified place, on the West Scheldt. *Hulst*, *Axel*, and *Philippines*, are three other small fortified towns, situate, like the two preceding, in that part of Zealand formerly called the Flanders of the States-General. *Terneuse*, on the West Scheldt, a small but important town, at the termination of the great canal leading from the sea to Ghent. *West-Kapelle*, a small town at the western extremity of Walcheren.

North Brabant.—BOIS-LE-DUC (called by the Dutch *Hertogensbosch*, or Duke's Wood), the capital of the province, is a considerable town with 13,000 inhabitants, situate upon the Dommel; and is noted for its fine church of St. John, numerous manufactures of ribbons, and two celebrated manufactories of musical instruments. *Breda*, a fortified town, on the Merk, with 9000 inhabitants, a fine cathedral, and a royal military academy, where 22 professors teach everything necessary for officers and engineers. *Bergen-op-Zoom*, a strong fortress on the East Scheldt, with a harbour and about 6000 inhabitants. *Grave*, with 2000, and *Huesden* with 1600 inhabitants, are two other strong places situate upon the Maas. *Tilburg*, a town of 10,000 inhabitants, with a number of flourishing cloth manufactories. *Oosterhout*, a town of 6000 inhabitants, with manufactures of very good pottery.

Utrecht.—UTRECHT, the capital of the province (the *Ultra-Trajectum ad Rhenum* of the Romans), a very ancient city, situate upon a branch of the Old Rhine, is of some importance for its industry, its literary establishments and its commerce. It stands on a rising ground, in a pleasant situation, and has an agreeable appearance. As usual, it is intersected by canals, and the public mall or promenade with numerous avenues of fine trees, is highly ornamental. The university possesses a rich library,

fine collections of objects of natural history, a cabinet of minerals, a botanical garden, and an observatory, and is usually attended by about 600 students.—Population, 34,000. In the neighbourhood is *Zeyst*, a village, where there is a community of Moravians, whose industry renders it flourishing. *Amersfort*, a commercial town, with about 9000 inhabitants. *Oudewater*, a small town upon the Yssel, with 1600 inhabitants, noted for its ropeworks, and vast plantations of hemp.

Guelders, or *Guelderland*. — *Arnheim*, a fortified commercial town, upon the Rhine, with 11,000 inhabitants, is the capital of the province. *Nimwegen* or *Nimeguen*, a strong town on the Waal, with 16,000 inhabitants. *Nieuwkerk*, a seaport town on the *Zuider Zee*, with 5000 inhabitants. *Zutphen*, on the Yssel, a fortified town with 9000 inhabitants. *Harderwyk*, another fortified town on the Zuider Zee, with 4400 inhabitants.

Overyssel.—ZWOLL, the capital of the province, is a fortified town with 13,000 inhabitants. *Deventer*, on the Yssel, a strong place with 10,000 inhabitants. *Kempen*, with 7000. *Almelo* and *Enschede*, with 2500, and noted for linen. *Ommerschanz*, a small town, in the neighbourhood of which an agricultural colony of paupers and criminals has been established.

Drenthe.—ASSEN, the capital, is a very small town with only 1200 inhabitants. *Frederiksord*, a pauper colony, founded by the Benevolent Society. *Meppel*, a thriving town with 5000 inhabitants, is the largest in the province.

Groningen.—GRONINGEN, the capital, is a large well-built town with 24,000 inhabitants. It contains some fine buildings, — as the church of St. Martin, the town-house, and the bridge Botering Hoog; and several literary establishments, of which the university and the botanic garden are the principal. *Delf-zyl*, a small fortified seaport town on the Dollart Gulf, with 3000 inhabitants. *Windschoten*, a small town with 3000 inhabitants, situate upon the canal which leads from Groningen to the Ems.

Friesland. — LEUUWARDEN, the capital, is a large town, containing an industrious population of 17,000; with a considerable trade. *Harlingen*, a commercial town with 7000 inhabitants, and a harbour on the Zuider Zee. *Franeker*, a small town with an athenæum, which has replaced the university suppressed several years ago. *Sneek*, a town with 5000 inhabitants, who manufacture great numbers of wooden clocks.

Limburg. — MAESTRICHT, upon the Maas or Meuse, is an important fortified town, containing some fine buildings, a royal athenæum, and several other literary establishments. In the neighbouring hill of St. Peter's are immense quarries, or under-ground galleries, said to occupy a space of 18 miles long, by 6 wide, and crossing in every direction, so as to form an intricate labyrinth.—Population about 18,000. A fine stone-bridge unites Maestricht with *Wyk*, a small town comprehended within the line of its fortifications. *Weerdt*, a small town with 5000 inhabitants. *Sittard*, with 3000 inhabitants. *Vaels*, a large village with 3000 inhabitants, near Aix-la-Chapelle. *Venloo*, a fortified town of 5000 inhabitants, with a bridge of boats over the Meuse. *Ruremond*, also a fortified town on the Meuse, with 4500 inhabitants.

Luxemburg.—LUXEMBURG, the capital of the grand duchy, is a considerable town with 11,000 inhabitants, and is reckoned one of the strongest fortresses in Europe. It is one of the fortresses of the Germanic confederation; the Prussians have the right of forming part of its garrison; but the King of Holland, as Grand-Duke, appoints the governor and military commandant, subject to the approbation of the Germanic Diet.

DUTCH COLONIES. — *In Asia*, Java, part of Sumatra; Amboyna, Banda, Ternate, Macassar, Timor. In *Africa*, several forts on the coast of Guinea. In *America*, Surinam, or Dutch Guiana; the Islands of Curaçoa, Aruba, Buen-Ayre and Aves, in S. America; St. Eustatia, Saba, and part of St. Martins, in the West Indies. The population of the colonies is reckoned to amount to 6,650,000, of whom 6,440,000 are of the Malay race, 110,000 Chinese, and 100,000 negroes.

GERMANY.

(*Ger.* DEUTSCHLAND — *Fr.* ALLEMAGNE.)

ASTRONOMICAL POSITION. — Germany extends from sea to sea across the middle of Western Europe, between 45° 30′ and 55° N. lat., and between 5° 48′ and 19° 20′ E. long.

DIMENSIONS. — The greatest length of Germany, measuring from the west side of the Grand Duchy of Luxemburg to the eastern extremity of Austrian Silesia, on the border of Gallicia, is 588 geographical, or 678 English miles; its greatest breadth, measuring from the southern extremity of the Tyrol, to the northern border of Holstein, is 520 geographical, or 600 English miles. The superficial area is about 185,822 square geographical miles, or 246,795 English miles.

BOUNDARIES. — *Northern:* — The Baltic Sea, Denmark, and the North Sea, or German Ocean. *Eastern:* — Hungary, Poland, and Prussia. *Southern:* — Switzerland, Italy, the Adriatic Sea, and Illyria. *Western:* — France, Belgium, and Holland.

GENERAL ASPECT. — The southern, and more particularly the south-eastern, and central parts of Germany, are intersected by numerous ranges of mountains, which are separated by narrow valleys; while the northern portion of the country sinks into a wide sandy plain, very little raised above the level of the ocean. The Tyrol, and the south-eastern provinces of Austria, are wholly occupied by branches of the Alps, hardly inferior to those of Switzerland, and presenting everywhere long narrow valleys, dismal precipices, lofty cataracts, and glaciers. To the north of this mountainous country the valley of the Danube extends almost across the whole breadth of Germany, declining from a height of 2000 feet near the source of the river, to about 350 on the borders of Hungary. In passing through Bavaria, the valley expands into a plain of considerable extent, which, at Ratisbon, on its eastern border, is 1000 feet above the level of the sea, and gradually rises as it approaches the mountains. The country, again, immediately north of the Danube, is occupied by the various ranges of the Hercynian and Bohemian mountains, which, though of considerable elevation, cannot be compared in altitude with the Alps. They form a series of high valleys and table-lands, which fill up the central portion of Germany, and, in their eastern prolongation, form the singular valley of Bohemia, which presents appearance of having been a lake, before it was drained by the bursting of its mountain barriers. To the north of these mountains the country sinks into plains, the largest of which extends without interruption through Lower Silesia, Lusatia, Brandenburg, Pomerania, Mecklenburg, Holstein, Hanover, and the lower part of Westphalia, where it assumes the appearance of a vast heath or morass, an appearance, indeed, which it exhibits in other places. To the west of the Elbe it is almost entirely destitute of trees, and presents a succession of level tracts covered with heath and juniper, and of moors consisting chiefly of deep beds of turf, intersected by rivers, which flow in depressions from 100 to 200 feet below the general level of the plain. To the east of the Elbe the country is more sandy, but the sandy tracts are all covered with various kinds of pine, and interspersed with fertile tracts, which are sometimes of considerable extent. The beds of the rivers also are generally wider, and less deep than in the western part of the plain. The plain of Saxony, of which Leipzig is the centre, is distinguished from the rest by a higher elevation and a more fruitful soil. The centre of Germany is much diversified by picturesque scenery, and abounds in verdant and well wooded valleys, which are watered by clear streams. The banks of the Meyn, the Fulda, and the Moselle, are remarkable for their varied scenery, and the valley of the Rhine unites the grandeur of a fine landscape with the appearance of a highly fertile country. In the large and elevated plain of Bavaria, the soil is cold, but generally productive, though in some places it is barren and covered with marshes, and in others, with forests of fir-trees. In the Austrian territory the plains are confined by the Alps; but are equally fertile, while they are as deep and sometimes as narrow as those of Switzerland.

MOUNTAINS. — (See *antè*, p. 48.)

RIVERS. — Germany is one of the best watered countries in Europe, and contains 60 navigable rivers.

The DONAU (DANUBE) rises in the Swartz-wald (Black Forest) in Swabia, at the height of 2200 feet above the level of the sea. It has three principal sources; the *Brigach* and the *Briege*, which are both

larger than the third, the *Donau*, which is so small that it is inclosed in a stone basin, and formed into a fountain in the court of the castle of Donau-Eschingen. The river, flowing rapidly, but without any falls, is joined by the Iller near Ulm, and by the junction is rendered navigable. Encreased by numerous accessions of tributary streams, it winds to the north past Ratisbon; after which it leaves the plain of Bavaria, and enters a narrow valley, which extends from Passau to the neighbourhood of Vienna. Here the river, passing between mountains, has in many places no other valley than its bed; and even that is confined by rocks, which agitate and break its waters. The rocky island of *Warth*, opposite Grein, divides its course into two branches, the *Hoesgang*, which is not navigable, and the *Strudel*, which may be passed without danger. At no great distance farther down, its waters are driven against rocks, and tumbled on one side into the gulf of the *Luey*, and on the other into the *Wirbel*, a rapid and dangerous eddy. As it approaches Vienna, its waters are spread over a wider surface, inclosing several islands, and its course becomes gradually slower. From Ulm to Vienna it passes through a succession of the most picturesque scenery, deemed by some travellers to be more beautiful than that of the Rhine; but the rapidity of the stream, and the frequent occurrence of shoals, rocks, and whirlpools, render the navigation somewhat difficult. A few miles to the eastward of Vienna, it passes the border of Germany, and enters Hungary. Below Presburg the river runs with great velocity, is crowded with islands, and divides into three branches, which again unite below Raab. From this point its course is first easterly, it then turns abruptly south, and flows a long way in that direction, between banks alternately covered with reeds, willows, and poplars, and varied occasionally by forest-trees and patches of sand. Below Belgrade it winds its way, now between hills, and now through a cultivated plain; at one time separating into two, three, or even four branches; at another forming only one vast stream. Below Moldava it passes, for 60 miles, through a succession of rapids and shallows, interspersed with rocks and sandbanks, where it has cut a passage for itself through the cross chain of hills which connects the Carpathian mountains with the Alps; and, between Drencova in Hungary, and Scala Kladova in Servia, the navigation is effectually interrupted by three great rapids, the principal, and last or lowest of which is the famous cataract called the *Iron Gate*, where the stream rushes through a narrow channel between stupendous rocks with great rapidity, and a noise so overpowering as to drown every other sound, ending with a series of whirlpools, eddies, and smaller falls. To obviate these interruptions to the navigation, five lateral canals have been projected, and will probably ere long be executed; but in the meantime, the communication is to be maintained by a new road to be formed along the bank. Further down, the Danube gradually increases in width: before reaching Rutschuk it is a league wide, and below Hirsova it forms an expanse of water, like a sea, studded with islands. Near Ismael it divides into several branches, which form a delta of swampy islands, with little or no vegetation except bulrushes. Of these branches the principal are:—the *Kilia*, the *Sulinz* or *Sulina*, the *Georgieff*, and the *Portiss* or *Portiz*. The Kilia flows past Ismael, Tutshkoff, and Necrassoffka; its navigation is rendered extremely difficult from the multitude of islands and shallows with which it abounds. Its whole course is about 70 miles; and its depth, which is 21 feet on the Besserabian bank, declines to 6 or 7 near the Black Sea. The *Sulin* arm flows in one undivided channel past the Turkish fortress of Tultsha, which stands on its right bank. After running about 10 miles, it is broken into two distinct channels, separated by a neck of land called the *Georgieffian Tshetal*: the most northerly, termed the *Sulinian Danube*, runs N.E., with numberless windings, into the Black Sea; the other, called the *Georgieffian Arm*, flows S.E. into the sea. The Sulin arm is about 64 miles long, varying from 700 to 1050 feet in width; its banks are high; it is 20 feet deep near its mouth, 40 feet somewhat higher up, and 60 at Tultsha. Here and there it is obstructed by shallows; but there is good footing on the banks, particularly on the right, which might at small expense be turned to excellent account for drawing vessels up the stream. The Georgieffian arm, from the point where it leaves the Sulin, flows S.E. for 65 miles, and enters the sea in one stream; but an island lies at the mouth, behind which there is a sandbank, stretching forward about four miles into the sea, which renders this arm of difficult access to navigators. It is known by the name of the *Gederless Bogasi*, or *Girlo of Georgieff*, and is broader than the Sulin, the width varying from 1050 to 1400 feet; the depth is 30 feet, except when it approaches the sea, where it becomes so shallow as not to exceed 4½ feet. By the treaty of Adrianople it forms part of the border between Russia and Turkey, each nation having the power of navigating it. The Portiz is an offset from the latter, which it quits about 23 miles below the commencement of the Georgieffian branch: it likewise bears the name of *Dunawez*, flows 26 miles straight S., and falls into the great Liman or Lake *Raselm*, which empties itself through a very broad but shallow mouth into the sea. This mouth is named the *Girlo of Portiz*, and is the most southern of the arms or outlets of the Danube. It is generally very shallow, and unfit for navigation. The Liman of Raselm is about 56 miles in circumference, and from 6 to 9 feet deep: the Turkish town Babadah stands on its west bank, at the foot of the Bulgarian chain. The whole of the Portiz arm was left to Turkey by the treaty of Adrianople; whilst a line of demarcation was drawn across the space intervening between Lake Raselm and the Georgieffian arm, along the right bank of the latter; and this space, beyond which the Turkish villages commence, was declared neutral ground. The free navigation of the Lower Danube being of the highest importance to the Austrian States, a convention was lately executed between the Austrian and Turkish governments, whereby the latter engaged to form a navigable canal from the Danube at Rassowa, near Cherno-voda, to Kustenjil, on the Black Sea, so as to avoid the circuitous course of the lower part of the river, and the Russian frontier, where the fiscal and sanitary regulations of that rapacious power might prove a serious obstacle to the Austrian commerce. More recently, it has been proposed to substitute a railroad.

At Ulm the Danube is 200 feet wide, and 10 or 12 deep; at Neuburg, it is 240 feet wide; at Ingoldstat, 500; at Ratisbon, 600; at Straubing, 400; at Passau, 750; at Linz, 500; at Presburg, 750; at Buda, 2000; at Belgrade, 2540; and at Galacz, 2100. At Donau-Eschingen its height above the level of the sea is 2124 Paris feet; at Tuttlingen, 2000; at Siegmaringen, 1779; at Ulm, 1456; at Donauwerth, 1233; at Ingoldstadt, 1100; at Passau, 798; at Vienna, 470; at the confluence of the March, 410; at the mouth of the Raab, 341; at Komorn, 328; and at Ofen, or Buda, 300½. Excepting only between Drenkova and Kladova, the Danube may be said to be navigable for steam-vessels from Ulm to the sea; but even in the lower part of the river, the navigation is rendered difficult by the frequent occurrence of shallows and sand-banks, intersected by narrow and intricate channels; and so numerous are its sinuousities, that between Presburg and the Black Sea, a direct distance of 650 miles, the course of the river measures 1200; while the abruptness of its windings places the voyager repeatedly on what appears to be a lake shut in by mountains; and so completely changes his prospect, that he can seldom see the object close by which he sailed half an hour before, though he may be brought in sight of it again after a voyage of 30 or 40 leagues.

The principal affluents of the Danube in Germany are:—the *Ablach*, *Riess*, *Rotlam*, *Westerlich*, *Blau*, *Brenz*, and *Hurbin*, in Wurtemberg; *Iller*; *Roolt*; *Gunz*; *Kamblach*; *Mindel*; *Zusam*; *Schmutter*; LECH, with its affluents the *Wils* and *Wertach*; *Acha*; *Par*; *Ilm*; *Abens*; *Gross-Laber*; *Kleine-Laber*; *Atterach*; ISAR, with its affluents, the *Loysal*, *Glan*, and *Ammer*; *Wils* and *Kolbach*; INN, with its affluents, *Alza*, *Salza*, *Echnach*, *Roch*, on the right; *Wernitz*, with its affluents *Salz* and *Eger*; *Altmuhl*; *Laber*; *Nab*, with its affluents *Wils*, *Lautrach*, *Schwarzach*, *Murach*, *Pfreimt*; *Regen*, with its affluents *Kederspach*, *Camp*; *Wisent*; *Kinsach*; *Ilitz*; on the left, all in Bavaria:—*Traun*; *Ens* and *Steyer*; *Ips*; *Erlauf*; *Trasen*; *Wien*; *Leyla*, on the right; *Kamp*; *March* or *Morava*, with its affluent the *Taja*.

The RHEIN (RHINE) rises in the Rhetian Alps, and flows into the Boden See, where it becomes a German river. From the Rheinfall at Lauffen, where it is 1173 feet above the level of the sea, it subsides rapidly to Base., where it is 765. At Basel, it turns abruptly to the north, and waters a rich and beautiful valley, bordered by the mountains of Vosges, Schwarzwald and Odenwald. Its course onward to Kehl is very impetuous; but, flowing afterwards in a broad channel, studded with islands, it assumes a very different character. Its breadth at Mentz is about 600 yards; as it proceeds in its course it waters a romantic, though fertile country; and a line of hills covered with vineyards, stretches at no great distance from its banks. From Bingen to near Bonn it is confined by mountains which cross the line of its channel; and small islands and headlands formed by the rocks produce a very picturesque landscape. Below Bonn, where it leaves the mountains, it flows in au open level country to the borders of Holland, and by its branches forms a delta which occupies a great portion of that kingdom. At Schaffhausen the Rhine is 230 French feet wide; at Basel, 750; between Strasburg and Speyer, from 1000 to 1100; at Mainz, from 1600 to 1700; between Bingen and Coblentz, 1160; at Cologne, 1300; below Wesel, 1580; and at Emmerich, 2150. From the great fall at Schaffhausen to Basel, the navigation of the river is not very easy, nor always practicable; below Basel it flows with great impetuosity, forming a multitude of islands; even as far as Strasburg the navigation is not without danger; farther down it becomes a fine navigable stream, still not quite free from risks and difficulties, particularly in the deep and narrow gorge which it enters below Bingen; but below Coblentz the navigation is uniform, uninterrupted, and free from danger.

Its principal German affluents are :— The *Argen*, *Aach*, *Stockach*, which fall into the Boden See; the *Wuttuch*, *Schlucht*, *Alb*, and *Wietra*. between Constance and Basel; *Wiesen*, between Basel and Huninguen; *Elz*, with its affluents, *Glotter* and *Treisam*; *Schlutter* and *Unditz*; *Reuch*; *Acher*; *Murg*; *Alb*; *Krieg*; *Kruich*; *Angel*; *Leim*; NECKAR, with its affluents, *Steinach*, *Nagold*, *Ens*, *Strudel*, *Kocher*, *Tagst*, *Kernau*, *Lax*, and *Elsenzbach*, all from Baden, Wurtemberg, and Bavaria; *Lauter*, *Queich*, *Haim*, *Reh*, *Eis*, *Pfrim*, from the Palatinate; *Weschnetz*, *Modau*, *Langraben*, *Muhl*, and *Schwarz*, in Darmstadt; MEYN, formed by the *Roth-Meyn*, and *Weiss-Meyn*, with its affluents, (*Rodach*, *Hasbach*, *Cronach*, *Steinach*, *Ranzach*) *Worn*, Franconian *Saale*, *Kreuz*, *Elsenau*, *Mudau*, *Aschaff*, *Kahl*, *Muinling*, *Kinzig*, and *Niddau*; NAHE, with its affluents, *Bibber*, *Simmer*, *Glan* and *Lauter*, *Alsenze*, *Wiss*; LAHN, with its affluents, *Ohm*, *Wehe*, *Wieseck*, *Lindau*, *Dell*, *Embs*, *Aar*, *Dreisch*, *Muhl*; MOSELLE (See France); *Nette*; *Aber*; *Seig*; *Wipper*; *Ruhr*, with its affluents, *Lenne* and *Bigge*; *Emser*; *Lippe*; *Erft*.

The EMS rises in the Prussian province of Westphalia, and runs northward to the Dollart, a gulf of the North Sea. Its principal affluent is the *Hase*.

The WESER, formed by the union of the *Werra* and the *Fulda*, which takes place at Munden, in the Hanoverian province of Hildersheim; flows through Hanover into the North Sea, after cutting through a range of hills (the Wiehengebirge) 600 to 800 feet high, at the Westphalian pass, near Minden. Its other principal affluents are :— The *Eder*; *Schwalm*; *Horsal*, *Norra*, *Sontra*; *Dumel*; *Emmer*; *Warr* and *Else*; *Aue*; ALLER, with its affluents, *Aue*, *Witze*, *Leine*, *Bohme*; *Wumme*, *Worpe*, *Hamme*; *Delme* and *Hache*; *Hunte* and *Lethe*; *Drept*, *Giesle*.

The ELBE rises on the eastern side of Bohemia, and leaving that kingdom by a deep gorge in its northern mountain border, flows in a north-westerly direction towards Hamburg, where it forms a large estuary, with a narrow and intricate channel, extending 70 miles to its mouth in the North Sea. The width of the Elbe at Koniggratz is 100 feet; at the mouth of the Moldau, 300; at the border of Bohemia, 400; at Konigstein, 540; at Dresden Bridge, 960; below Meissen, at the broadest part, 1100 feet. The source, *Elb-brunnen*, is 4260 feet above the level of the sea; at Dresden the elevation has already fallen to 262 feet; at Magdeburg, to 128; and at Havelmouth, to 58. Its principal affluents are: —the *Moldau*, *Beraun*, and *Eger*, in Bohemia; the *Schwartz*, or *Bluck-Elster*, the *Mulde*, the *Saale*, *White Elster*, and *Pleisse*, in Saxony; the *Havel* and the *Spree*, in Brandenburg.

The TRAVE, which flows through the territory of Lubeck into the Baltic Sea at Travemund.

The WARNOW, or *Warne*, which flows through Mecklenburg-Schwerin and Pomerania, past Rostock, into the North Sea.

The RECKNITZ flows through Mecklenburg-Schwerin and Pomerania into the Baltic.

The ODER rises in the mountains of Moravia, in the ancient district of Olmutz; but the *Elsa*, which rises from the base of the Carpathians, is really the principal source. The Oder flows through the whole length of Silesia, inundating, undermining, and changing almost everywhere its low and sandy banks, and forming in many places large fens and turbid lakes. Flowing onward through Pomerania, it divides into several streams, which encircle marshy islands. The eastern branch, between Garts and Stettin, or the *Great Reglitz*, is the one best adapted for navigation; the other retains the name of Oder; both fall into the Lake of Damansch. The *Papen Wasser*, the outlet of that lake, communicates with the Stettiner-Haf, a fresh-water lake, which is wholly fed by streams and rivers, no salt water ever flowing into it. It pours its waters into the Baltic by three outlets: the *Peene*, on the west; the *Swine*, in the middle; and the *Divenow*, on the east, which are indeed only the mouths of the Oder. Its sources are 1705 feet above the level of the sea; at the mouth of the Oppa, the elevation is 656 feet; at Ratibor, 552; at Oppeln, 480; at Breslau, 370; at Steinau, 250; at Gross-Glogan, 212; at Krossen, 159; and at Frankfort, 116. The principal affluents of this great river are: —the *Wartha*, and the *Ihna*, on the right; the *Neisse* of Glatz, or *Upper Neisse*, the *Weistritz*, the *Katsbuch*, the *Bober*, the *Neisse* of Gorlitz, or *Lower Neisse*, and the *Peene*, all on the right.

LAKES.— The *Boden See*, or *Lake of Constance*, between Switzerland and Swabia (*anté*, p. 364); *Ammer*, *Wurm*, and *Chem*, in Bavaria; *Feder*, in Wirtemberg; *Atter*, *Traun*, *Konig*, and others, in Austria; *Mauritz*, *Kolpin*, *Flesen*, *Plau*, *Schwerin*, and *Ratzeburg*, all in Mecklenburg; and *Diepholtz*, in Hanover. Except the first, none of these are of great extent, or of any importance.

CANALS.— The German canals are few and unimportant. In Austria, the *Canal of Vienna* forms a communication between that city and Neustadt. In Brandenburg, are the *Canals* of *Finow* and *Plauen*, which connect the Oder with the Havel, an affluent of the Elbe; and the *Frederick-William's Canal*, which joins the Oder, above Frankfort, with the Spree. A great canal to connect the Rhine with the Danube, by means of their affluents the Altmuhl and the Rednitz has been projected, and actually begun near Bamberg, and is to bear the name of the *Ludwig Canal*, in honour of the present King of Bavaria. Another has been projected, to extend from Cannstadt, on the Neckar, across the Rauhe-Alp, to Ulm on the Danube. The Ludwig canal has been already executed from Bamberg to Nuremberg, and is expected to be completed throughout in 1842.

RAILROADS.—These have been projected in various parts of the country, and considerable portions of them are already executed; particularly that between Nuremberg and Furth; and another between Brunswick and Wolfenbuttel, intended to be continued to Harzburg. One is forming between Dresden and Leipzig. The others are:—the Railway of the Taunus, terminating at Mentz; one between Augsburg and Munich, and continuing to Kempten and Lindau, on the Lake of Constance; one between Stuttgardt and Frederickshafen on the same lake, by Ulm and Biberach; one from Vienna to Salzburg by Linz; one from Vienna to Raab in Hungary, crossing the Danube at Presburg; one, named the Ferdinand, from Vienna to Brunn, in Moravia; one to extend from Minden on the Weser to Co-

logne on the Rhine, by Rhens, Bielefeld, Castrupp or Kastrop, Willen, and Elberfeld, a distance of 131 miles; one from Berlin to Potsdam; one from Berlin to Frankfort on the Oder; and one from Magdeburg to Leipzig, by Halle. The railroad connecting Mentz, Frankfort, and Wisbaden, has just been opened (1840.) The Prussian government has also ordered the country between the Elbe, the Weser, and the Rhine to be surveyed, preparatory to undertaking a great railroad which is to connect Berlin and Cologne, as the two extremities, and unite them with Dresden and Leipzig. As Cologne will soon be connected with Brussels and Ostend, by railroads, the importance of this project will be apparent.

GEOLOGY.* — Along the southern slopes of the Rhetian Alps, and in the valley of the Adige, the peaks are composed of primary rocks; and dolomite or magnesian limestone there form rugged and fantastic masses, which at a distance look like buildings in ruins. This formation overlies porphyries, which seem to have undergone, through the action of great heat, a modification which is shown even in the limestone that it has raised up, having changed its primitive compact into a granulated texture, and destroyed the organized bodies of which it is full. At the base of the Styrian Alps, freestone, clay, and shell-marl, accompanied with large deposits of fossil vegetation, are found in the valley of the Muhr. These mountains contain no thermal waters, but a great number of chalybeate springs. The Alps of Salzburg, which extend to the Danube, are composed, near the source of the Ens, of granite and other primitive rocks. Their tops are lost in the clouds, and yet they appear less elevated than the limestone mountains below them, an illusion occasioned by the abrupt slopes of the latter, which obstruct the view of the summits that overtop them. To the west of the lower part of the Ens are found fine marbles and rock salt; to the east, mines of silver, lead, iron, and coal. Upon the right bank of the Danube, in the basin of the March, the low plains are covered with alluvium and detrital matter. Upon the adjoining slopes of the Karpathian, Gesenke, and Sudetic mountains, there are isolated basins of the coal formation, composed of freestone, sehistose clay, clay-ironstone, porphyries, metalliferous limestones containing lead, iron, and zinc, rocks composed of ancient shells, clay, gypsum, and beds of rock salt. All the adjoining summits consist of granite; but schistose and micaceous rocks appear in the lower parts. In Silesia the alluvial plains abound with blueish clay.

The constitution of the Bohemian mountains is essentially different in several respects. The Bohmerwald is formed of small grained granite, micaceous rocks, slate sehist, and syenite. These rocks present very rugged tops, with pyramidal and needle-shaped peaks, separated by deep ravines. Forests occupy their tops, and their bases are covered with pools and marshes. The summits and rounded flanks of the Riesen-gebirge announce the former presence of volcanic fires; they contain also freestone and basalt, surrounded with limestone full of fossil shells. The southern slopes of the Erzegebirge show also many traces of volcanic ageney. Their porphyries have undergone some violent upheaving; the celebrated mineral waters of Karlsbad and Toplitz spring from these rocks; the feruginous waters of Bechin and Eger, and several others less celebrated, rise from ground which bears the marks of igneous origin. Near Eger is the *Kammerberg*, a conical mountain, covered with lava and scoriæ. The substructure however of the Erzegebirge is granitie, and its mineral wealth, particularly on the Saxon side, is of such importanee, as to have given the chain the name it bears, which means metalliferous mountains. In the mountains of Moravia, particularly towards the north, the freestone is so easily decomposed, that it everywhere exhibits at a distance the forms of extensive ruins. Towards the centre of Bohemia, not far from the banks of the Moldau, the primitive micaceous rocks are covered with alluvium, in whieh are found fossil wood, and iron ore, containing 62 per cent. of metal.

The eourse of the Danube divides Bavaria into two great geological distriets. On the south, from the Lake of Constance to the mouth of the Inn, extend vast tracts of the same epoch as those of the Paris basin, reposing upon the older rocks which underlie the granite of the Alps. To the north of the river, the alluvial and transported soil contains the bones of extinct species of animals; in the valley of the Regen are found the bones of the tapir and rhinoceros; in that of the Meyn, the bones of gigantic elephants; and the caverns in the limestone rocks of the Stirgerwald contain immense masses of the bones of lions, hyænas, and various ruminant animals scattered in the alluvial clay. Deposits of the same kind abound in the valley of the Neckar. The calcarcous schists of the valley of Altmuhl contain the remains of crocodiles. The banks of the Regnitz and the Meyn consist of primitive limestone, and other quartzy deposits. The granitie rocks of the Black Forest support in some places limestone of the secondary epoch; the spurs whieh extend towards the north

* *Abrege de Geographie*, par Malte Brun, &c. Paris, 1838, p. 334.

are composed of old sandstone; the slopes that overlook the Rhine are formed of soil posterior to the ehalk: the flanks of the whole ehain are covered with thiek forests.

To the north of the Meyn the hills are composed of primitive limestone, flanked with sandstone; to the east and west, of volcanic deposits, whieh form on the one side the chains of the *Vogelberg* and *Wester-Wald*, and on the other, on the left bank of the Rhine, the basaltie group of the *Eifel*. Around these oeeanie and volcanie produets granitic summits and table-lands rise here and there; but to the north of the *Thuringer-Wald* the granite gradually disappears, and near the Aller there is no longer any traee of it. At the mouth of the Aller the old limestone terminates; to the north and the west all the plains whieh descend to the North Sea, as far as the Elbe, are eovered with immense beds of sedimentary deposits, or with beds of sand lying upon ehalk, limestone, gypsum, and sandstone, which mix at last, along the shores of the Baltie, with the sandy and marshy soil of Pomerania. This great plain has every appearanee of having been at no very distant epoch covered by the sea; and in many plaees its surface still consists of bare sand.

The soil of Germany is generally produetive. The plains in the north eontain much arid sandy land, and large tracts of heath, moor and morass; but along the borders of the rivers there are some rich and fertile soils, where the most abundant erops are reared. In the mountains of the south there is also much barren or slightly-productive land; but the beautiful valleys and small plains among the hills rival in fertility the best alluvial soils of the north. In general the soil of the north is heavy, and in the south light; the former best adapted for corn, and the latter for vines. The best soil is in the middle between the northern mountains and the sandy plains. In Bohemia, Silesia, Franeonia, Saxony, and on the Rhine, the proportion of good soil is mueh greater than in the north or south.

MINERALS. — No part of Europe yields a greater variety or greater abundanee of mineral produetions, and nowhere are the mines wrought with so much skill and eeonomy. Preeious stones are found in many plaees; rock erystal, amethysts, topazes, are found in Bavaria; caleedony, agate, petchstein, and poreelain jasper, in Bohemia; barytes in many plaees; marbles, gypsum, and alabaster, in Bohemia; alum near Toplitz; roek salt and glauber salts in various parts; and abundanee of the earths suitable for making pottery from the eoarsest kinds to the finest poreelain. Fossil coal is found in many districts, and great quantities of it are consumed; but the eheapness of wood, and the prejudiees of the people against the use of it in their houses, has operated to prevent the mines from being eompletely explored, or worked to the extent of whieh they are eapable. Gold is proeured by washing, though in very small quantities, in Saltzburg, in Bohemia, in the Rammelsburg, and in Silesia. Silver and einnabar are raised from the mines of the Erzegebirge in Saxony. Iron, copper, tin, lead, calamine, bismuth, eobalt, nickel, titanium, arsenie, and almost every other mineral, are more or less abundant in the mines. The abundanee of mineral substanees everywhere seattered, and whieh it would be diffieult to enumerate, has promoted the study of mineralogy, and given birth to the school of Freyberg, from whieh the pupils of Werner have earried the science to every part of the world.

The great abundance of mineral springs, hot, eold, bitter, aeid, salt, is a eharaeteristie feature of the German territory. The thermal springs of Aix-la-Chapelle, Pyrmont, Carlsbad, Toplitz, Baden on the Rhine, Bruckenau, Kissingen, and Wisbaden, attract every year crowds of visitors. Those of Isehel, Baden near Vienna, and many more, though less resorted to, are nowise inferior. The acidulated springs of Selters, Driburg, and Rohitseh; the bitter waters of Seidsehutz, Seidlitz, and other places, and the long series of salt springs that follow the base of the northern Alps, are suffieient proofs that Germany abounds with veins or deposits of the most varied kinds. The country is moreover generally well supplied with good and wholesome water for the ordinary purposes of life; and the only exceptions are to be found in some marshy distriets of Westphalia, and in some of the cold valleys of Saltzburg.

CLIMATE.—The climate is greatly modified by the elevation and deelivities of the land; but, from the great extent of the country, it does not admit of any general deseription. In respect of elimate, Germany may be divided into three great zones, though these are also suseeptible of subdivisions. The first comprehends the northern plains, the temperature of whieh is not eold, but humid and variable. They are exposed to every wind, and to the fogs and tempests eonveyed from two seas. The northwestern plains are subjeet to frequent rains and desolating hurricanes from the North Sea; but, the influence of the Baltie being less powerful, the climate of the north-east-

ern plains, though colder, is less moist and variable. The second zone comprehends the central portion of Germany:—Moravia, Bohemia, Saxony, Franconia, Swabia, Hessen, and the country on the Rhine. The mountains of this region form a barrier against the effects of the maritime climate; the sky is not obscured by mists, and the regular order of the seasons is not interrupted by winds and tempests; but the elevation of the land renders the climate colder than it is in other countries on the same latitude, but nearer the level of the sea. This zone is indeed the most agreeable in Germany, and may be subdivided into three regions: the first comprising Hessen and Saxony, where the grape yields only an acid and imperfect wine; but the peach and the apricot flourish: the second, comprising Bohemia, Moravia, and part of Franconia, where, from the height of the mountains, the snow is of longer continuance; but the effect of the summer heat is more sudden and powerful, so that abundant and early harvests depend in a great degree on favourable exposures: and the third, comprising the countries on the Meyn, the Neckar, and the Rhine, where the grape is of better quality; woods of chestnut and almond trees grow; and the summers are warmer and less variable than in the northern provinces of France. The climate, indeed, of this region is finer than any other in Germany, and is the most salubrious and agreeable of any in Europe. The third general zone is that of the Alps, whose lofty heights and rapid declivities connect very different climates. Thus the culture of the vine ceases in Bavaria and Upper Austria, but re-appears with fresh vigour in the neighbourhood of Vienna. The glaciers and perennial snows of the Tyrol and Saltsburg are in close contiguity to the valleys of Styria and Carniola, which are covered with fields of maize or vineyards, and almost bordering on the olive groves of Trieste, and the lime-trees of Riva. In general, the climate of the whole of Germany is very healthy. In the south, however, under the influence of the Alps, the air is raw and cold, whilst in the plains and open valleys a climate equal to that of the finest parts of Italy is enjoyed. The northern provinces are colder, damper, and more ungenial, and near the stagnant lakes, unwholesome. The weather, besides, undergoes extreme variations; and frost is frequently felt at a late period of the year.

VEGETABLE PRODUCTIONS. — Forest trees hold the first rank among the vegetable productions of Germany; for they not only supply the people with timber for their ships, houses, manufactures, and mines, but also a considerable quantity for exportation to other countries. The oak abounds in the central region, and is to be seen covering in groups almost every hill. The other trees are the beech, the ash, the mountain-ash, the poplar, the pine, and the fir; and in sheltered spots, walnut, chestnut, almond, and peach trees are also found. This description, however, is applicable only to the central region; the coniferous trees, and the pine in particular, which in that region are confined to the hills and some dry districts, become more common in the sandy plains watered by the Oder and the Elbe. But these trees are only of an ordinary quality, and it is vain to look in northern Germany for the hard pine and the lofty fir of Scandinavia. The pine and fir forests follow the courses of the rivers, and extend generally from north-west to south-east; trees which have deciduous leaves are seldom seen among them. To these monotonous and sombre forests succeed wastes covered with heath; and the remaining part of northern Germany consists of extensive meadows along the banks of the rivers and marshes, or of alluvial deposits near the sea-coasts. In the hills, however, of eastern Holstein, of maritime Mecklenburg, and of Rugen, the vegetation is different, and the oak re-appears on a more fruitful soil.

The south of Germany exhibits probably two zones of vegetation: the first embracing the northern declivity between the Tyrolese mountains and the Danube; and the second the eastern declivities, which comprise Austria, Styria, and Carniola. In the first of these divisions, the beech and the maple appear to grow so high as 5500 feet above the level of the sea, and perhaps the *pinus-umbra* at a still greater elevation. But that region of coniferous trees does not terminate below the height of 4000 feet, to give place to a region of beech trees, as is the case in Switzerland; for, at an elevation so low as 2000 feet, the hills of Bavaria are covered with the juniper and the red pine; while the oak and the beech, though of ordinary size, are by no means rare. The birch is, next to the beech and the fir, the most common tree on the declivities. The vegetable zone of Austria, or the eastern declivities of the Alps, exhibits a more rapid succession, from the snows of the mountain tops to the vineyards of Hungary and the olive groves of Istria; but the precise limits of the different classes of vegetation in this region have not been indicated by botanists. The culture, however,

of the vine ceases at the height of 2000 feet, that of wheat at 4000, and at a greater height the country is mostly covered with pasturages and coniferous trees.

Grain of almost every kind is cultivated; wheat and barley are most common in the south; and the winter wheat of Bavaria is preferred to every other. Smelt is generally cultivated in Bavaria and Wurtemberg, along the Rhine and the Meyn; maize appears in great profusion in Styria, Moravia, and the Tyrol; buckwheat abounds in the sandy plains of the north; and manna or *festuca fluitans* is cultivated on the banks of the Oder. The culture of the potatoe has also become very general in the north; and, generally speaking, few countries are better provided than Germany with excellent vegetables of superior quality. The cabbage, for instance, which is exported to other countries in the form of sauer-kraut, surpasses any that grows in Belgium; and the same may be said of different kinds of turnips, carrots, peas, and beans. The culture indeed of these vegetables has been carried to a great degree of perfection. Gardening is much modified by climate; but the inhabitants in many places derive their subsistence from the culture of fruit trees and culinary plants. The hop finds in Germany a grateful soil and climate, and is well cultivated. The abundant harvests, particularly in Brunswick, Bohemia, Bavaria, and Franconia, supply numerous breweries, which support their ancient renown, and afford an agreeable beverage to all the northern and highland Germans. Tobacco is used to excess, but the culture of it is not carried to much perfection; and the German tobacco is much inferior to the American, the Turkish and the Persian. The madder of Silesia, the saffron of Austria, and the dyer's weld are now less used in the arts, and the cultivation of them has proportionally diminished. Owing to the prejudice in favour of Russian hemp, and the consequent non-cultivation of the article, Germany does not produce more than a third part of the material used for the sails and cordage of its shipping; though in Baden the stem of that plant rises sometimes to the height of sixteen feet, and a single pound of hemp has been converted into twenty yards of cloth. Lint, on the contrary, is very generally cultivated, and the greater part of it is manufactured in the country.

Vines were originally planted in Germany by the Romans, and are now cultivated successfully on the banks of the Rhine, the Meyn, the Moselle, the Danube, the Muhr, the Etsch or Adige, and the Save, where they produce wine as highly esteemed as any in Europe. The most valued of all the wines is that produced on the banks of the Rhine, known in England by the name of Hock, from the vineyards of Hockheim, where the best is made. The principal sorts are named, from the places of their growth, Johannisberg, Rudesheim, Hockheim, Markobrun, and Lieb-frauenmilch. The next in value are the wines of the Meyn, called Leisten wine, Stein wine, and Steyer wine. The wines from the Danube are next in estimation, and to them succeed those of the Tyrol, and the banks of the Moselle. The wines produced near the Lake of Constance, and in Bohemia, are much inferior; and those of Naumburg, Jena, and Meissen in Saxony, and Zullichau in Silesia, are of very indifferent flavour, especially after a moist summer, and indeed scarcely merit the name of wine; though, from their great abundance, they are very useful to the inhabitants. Of oil, neither the quantity nor the quality is important, the production being confined to a small district of the south. Great quantities of rapeseed and linseed oils are expressed; and, for the more common purposes, the oil of herrings, seals, and other aquatic animals, is very abundant.

ANIMALS.—The forests abound with wild animals, which afford sport to the princes and nobles, and furnish a considerable quantity of food to the higher and middle classes of the people. Wild deer of various kinds, and wild swine, are very numerous in many parts of the country. In some districts foxes are found in immense numbers; but the hunting of these animals is less an object with sportsmen in Germany than in Britain, as lynxes are also very numerous, especially in the southern mountains, and the chase of the latter is found to be the most exciting of all rural sports. There are bears of the small black species in the south, in Illyria, Steyermark, and Tyrol, but they are more dangerous to the beehives and the smaller animals than to man. Wolves are few, and only found in the Trans-Rhenish provinces. In some of the mountains the beaver is met with, though but rarely, and some other animals chiefly valuable for their fur. The most destructive animal is the field mouse, of a species called the Hamster, which is found in thousands in Saxony, and does incredible injury to the productions of the soil.

The original German horses are of a very inferior kind, and where they have not been intermixed with other breeds, generally bad; but an exception must be made in favour of the horses of Mecklenburg, East Friesland, Holstein, and Luneburg,

which are admirable for draught, or heavy dragoons, and have been propagated all over Europe. Horses for pleasure, or for mounting light cavalry, must be brought from other countries; but the jennets, a light small breed, are good and quiet. Asses are not common, even in the southern part of the country. Mules are to be seen in Hanover, near the Hartz forest, and in the Tyrol they are the common beasts of burden.

There are various breeds of cattle; the handsomest are those of East Friesland, Oldenburg, Holstein, and the other provinces along the German Ocean. The Hungarian breed prevails in many parts, but is more esteemed for the ease with which the animals are fattened than for the purposes of the dairy. A third sort is the Swiss breed, which, however, does not come wholly from the Alpine pasturages, but is furnished by Wurtemberg and a part of Bavaria. The breed produced from the mixture of these races is well adapted for the dairy; but either from the want of appropriate qualities in the animals, or from the imperfect method of fattening them, the oxen when killed are seldom more than 500 lbs. in weight, and the average of them is considerably lighter. Some attempts are now making to improve the breed, by the introduction of the Tyrolese bull, perhaps the most perfect animal of the beeve kind for meat and for draft, and which, when crossed with the best cows, produces the very superior cattle. The common practice of killing the calves from ten to sixteen days old produces very bad veal; but some of the beef, especially that near the banks of the Elbe, is excellent.

The German sheep are a mixture of the original coarse woolled race, crossed by a breed from the Ardennes. In a part of Illyria they have the sheep of Padua. The fine woolled sheep of Spain have been introduced by many of the princes, and have been vastly extended, especially in Saxony, Silesia, and Brandenburg, and will probably at no distant period be the principal if not the only race. Goats are common in all the States, but it is only in the more mountainous parts that they are to be seen in large flocks. Swine are the most important species of stock in Bavaria, Westphalia, Hanover, Mecklenburg, and Pomerania. They are of three different breeds; the long white breed, with the bent back; the short white, or yellow, with the same kind of back; and the black or yellow, of a short make; but these different breeds are becoming much intermingled.

Domesticated birds are very plentiful, but especially ducks and geese. The latter form an important part of the food on many of the farming establishments, especially in Pomerania, Bohemia, and Steyermark, where many families in the country cure from fifty to a hundred for their winter consumption. Wild birds are more numerous than in almost any other part of Europe. Wild geese, bustards, grouse, blackcocks, woodcocks, wild ducks, widgeons, teal, and snipes, are the most abundant. Besides these, the smaller kinds of birds, especially bullfinches and canaries, are numerous. The latter are chiefly taken in the Hartz Forest, from which they are circulated over Europe. The rearing of bees in the north, and especially in Lusatia, is productive of much honey and wax, which form important articles both for domestic use and for foreign trade.

The three seas which wash the coasts of Germany abound with fish. Besides the kinds which are caught in the ocean, the Baltic Sea and the Adriatic furnish their peculiar species. Among those of the former are the dersh and the klipfish (*anarchicos*); and of the latter the tunny, the Sardinia, and many others. The greater part, however, of the fish consumed in Germany, is the produce of the rivers and lakes, which supply in large abundance eels, lampreys, trout, salmon, sturgeon, perch, pike, salmon trout, barbel, carp, crawfish, and many others. With these various kinds the markets in the cities and towns are profusely supplied.

PEOPLE. — The majority of the inhabitants of Germany belong to the three following races: — the Germanic, the Slavonic, and the Greco-Latin. The *Germanic Race* comprises the Germans properly so called, or the DEUTSCH, divided into three branches: the OBER-DEUTSCH, or HIGH DUTCH; the NIEDER-DEUTSCH, or LOW DUTCH; and the FRISONS. The first branch may be considered as subdivided into: — the *Rhenanian*, comprehending the inhabitants of Baden, Wirtemberg, the old circles of Swabia, and the Upper and Lower Rhine; the *Danubian*, comprising the Bavarians, Austrians, Tyrolese, &c., and the German inhabitants of Bohemia and Moravia; the *Franconian*, which, besides the people of Franconia, includes also the Hessians and the Saxons of the southern portion of the late circle of Upper Saxony, and the greater part of whom are found in the kingdom and duchies of Saxony, the Prussian province of that name, Anhalt, &c. The NIEDER-DEUTSCH branch may be subdivided into: — the *Saxons*, properly so called, who inhabit Holstein, Hamburg,

Hanover, &c.; the *East Saxons*, who inhabit Mecklenburg, Pomerania, Brandenburg; the *Westphalians*, or *West Saxons*, who inhabit Oldenburg, Bremen, East Friesland, the Prussian province of Westphalia, and the greater part of Cleves-Berg. The third branch, or FRISONS, are now reduced to a small number, and inhabit the islands of Wangeroog, Schickeroog, Langeroog, Baltrim, and Norderney, on the coast of East Friesland, and the district of Saterland in Oldenburg. The Germanic race comprises about four-fifths of the total population of Germany.

The SLAVONIC RACE comprises very nearly the other fifth of the population, and may be divided into three branches:—the *Tchekkes*, *Chekkes* or *Bohemians*, with whom we must range the *Slowaques* of Moravia and Silesia; the *Hannaques*, and other tribes in Moravia; the *Polonais* of Silesia, with the *Cassoubes* of the northern extremity of Pomerania, and perhaps the *Slavons* of the duchy of Auschwitz; the *Sorabès*, or *Serbes* of Lusatia, and the circle of Cotbus, improperly called *Wends;* the *Windes*, comprising the Slavonic people of Syria, Carniola, Carinthia, and the late Austrian province of Friuli.

The GRÆCO-LATIN RACE comprises the inhabitants of the Italian portions of the Tyrol, Friuli, and Trieste; and the French who live on the left bank of the Rhine, and in the colonies of Brandenburg, and other places.

Besides all these there are about 292,500 *Jews*.

The high and the low Germans speak languages somewhat different, but are very similar in habits, character, and disposition. The Low German, or as it is called the *Platt Deutsch*, prevails among all the people of Lower Saxony, Westphalia, Holstein, Mecklenburg, Brandenburg, and Pomerania; but as the service in the churches, and the instruction in the schools is in High Dutch, all the peasantry even understand that language, though they prefer their own dialect for common use. In the southern countries, where only High Dutch is spoken, the peasantry use a dialect which is scarcely more intelligible to those unaccustomed to it than the Low Dutch. The Slavonic people are found to the eastward of the Elbe; they retain their Slavonic dialects, but with a great mixture of German words; are inferior in civilization, but industrious and contented.

EDUCATION.—No part of Europe enjoys advantages for education equal to Germany, especially the northern part of it. The parochial schools are so general that none but the wilfully ignorant, or those of imperfect faculties, can be unacquainted with reading, writing, and the first rules of arithmetic. The schools for classical instruction, denominated Gymnasiums, Pedagogiums, and Lyceums, are found in almost every large town, and dispense learning at a very cheap rate. The universities are sufficiently numerous and well endowed to provide instruction in the higher branches of knowledge upon terms nearly, if not altogether gratuitous. The universities are nineteen in number, viz. those of Heidelberg, Leipzig, Rostock, Marburg, Jena, Giessen, Kiel, Halle, Gottingen, Erlangen, Berlin, which are Protestant; Prague, Vienna, Wurtzburg, Munich, and Freyberg, Catholic; Tubingen, Breslaw, and Bonn, mixed. Besides these universities there are, in almost all the capitals, institutions for instructing pupils in the various branches of the medical, clerical, legal, and military professions, and of agriculture, mining, and the management of forest lands. There is also abundance of learned societies spread over Germany, many of which have been able, in the course of years to form such large collections of natural and artificial curiosities, as afford valuable assistance to those engaged in the pursuit of knowledge.

RELIGION.—Catholicism, Lutheranism, and Calvinism divide among them nearly the whole population, and enjoy in all the states the greatest freedom of worship; but for several years Calvinism and Lutheranism have been united in almost all the States, under the common denomination of the Evangelical Church. About one half of the population are Catholics; about two-fifths belong to the Evangelical Church; and the remaining tenth part is divided into Calvinists, Moravians, Mennonites, Jews, &c. Catholicism is professed by the greater part of the people of the Austrian provinces, Bavaria, Baden, Hohenzollern, Lichtenstein, and of the Ecclesiastical States secularized in 1803. Lutheranism is professed by the people of the Prussian provinces, Hanover, Wirtemberg, Saxony, Mecklenburg, Oldenburg, Hessen, Sachsen-Weimar, Sachsen-Coburg-Gotha, Sachsen-Meiuengen, Sachsen-Altenburg, Brunswick, Lippe-Schauenburg, Schwartzburg-Rudolstadt, Schwartzburg-Sondershausen, Reuss, Waldeck, Lubeck, Hamburg, Bremen, Frankfort, and Kniphausen; by the King of Wirtemberg, the Grand Dukes of Baden, Hessen, Oldenburg, Mecklenburg, and Sachsen-Weimar, the Dukes of Sachsen and Brunswick, the Princes

of Reuss, Schwartzburg, and Waldeck. Calvinism is professed by the majority of the people of Nassau, Anhalt, Lippe-Detmold, Electoral Hessen, and Hessen-Homburg; and the King of Prussia, the Elector of Hessen, the Landgrave of Hessen-Homburg, the Duke of Nassau, and the Princes of Anhalt, Lippe, and the Lord of Kniphausen.

GOVERNMENT. — The forty States of which the Germanic Confederation is composed, present every variety of government, from democracy to autocracy. The four free cities are republics; Bavaria, Wirtemberg, Baden, Grand-ducal Hessen, Nassau, Brunswick, Hanover, Saxony, are constitutional monarchies, each with two legislative chambers; Electoral Hessen, Sachsen-Weimar, Sachsen-Gotha, Sachsen-Meinengen, Lichtenstein and Waldeck, are also constitutional monarchies, each with one legislative chamber; Hohenzollern, Lippe, Mecklenburg, Schwarzburg, Reuss, Anhalt, and Sachsen-Altenburg, are monarchies feebly limited by provincial States. Oldenburg and Kniphausen are absolute monarchies. The governments of the Austrian, Prussian and Danish States will be mentioned under these respective heads.

All these States are united into a Confederation, the object of which is the maintenance of the external and internal security of Germany, and the independence and inviolability of the confederated States. By the federal act, all the members possess equal rights; and all are equally obliged to maintain in all its parts, the act which constitutes their union. The Confederation, in short, forms a body of sovereign States connected by rights and duties freely and reciprocally stipulated. Considered with respect to external relations, it constitutes a collective power, established upon a principle of political unity. The right of developing and completing the fundamental compact belongs to the united members of the Confederation, which is indissoluble by the very principle of its constitution. Consequently none of the members are at liberty to detach themselves from it; no new member can be admitted unless his admission is unanimously judged to be compatible with the existing relations and the general interests of the confederate States; no change in the actual state of the possessions of the members can affect their rights and their engagements to the Confederation, without the consent of all the members; and no voluntary cession of the sovereign rights belonging to any territory of the Confederation can take place without the same consent, unless in favour of one of the confederate States. The Confederation is represented by the Federative Diet, which is composed of the plenipotentiaries of all the States, and is the constitutional organ of its will and action, which it manifests by orders rendered in legal forms; and every act within the limits competent to the Diet, when freely voted and conformable to the fundamental laws, is deemed legal and obligatory. The management of the ordinary and current affairs of the Confederation is entrusted to an ordinary and permanent Federative Diet, in which all the members vote by their plenipotentiaries, either individually or collectively, in the following manner, without prejudice of their rank:—

Austria,	1 vote.	The Grand-ducal and Ducal Houses of Saxony,	1 vote
Prussia,	1 ..	Brunswick and Nassau,	1 ..
Bavaria,	1 ..	Mecklenburgh Schwerin, and Strelitz,	1 ..
Saxony,	1 ..	Oldenburg, Anhalt, and Schwarzburg,	1 ..
Hanover,	1 ..	Hohenzollern, Lichenstein, Reuss, two Lippes, and Waldeck,	1 ..
Wirtemberg,	1 ..	The four free cities of Lubeck, Frankfort, Bremen, and Hamburg,	1 ..
Baden,	1 ..		
Electoral Hessen,	1 ..	Total,	17 votes.
Grand-ducal Hessen,	1 ..		
King of Denmark, for Holstein and Lauenburg,	1 ..		
King of Holland, for Luxemburg,	1 ..		

The plenipotentiary of Austria presides in the Diet; but each State has the right of making propositions, which the presiding State is obliged to bring under deliberation within a given time. When fundamental laws are to be made, or changes are proposed in the existing fundamental laws; when measures are to be taken that relate to the federal act itself; when changes of organic institutions or other arrangements of general interest are to be adopted; when a declaration of war is to be made, or a treaty of peace to be ratified; or when a new member is to be admitted into the Confederation, the Diet is formed into a General Assembly or *Plenum Concilium*, and the votes are distributed in the following manner, according to the extent of the several states:—

Austria, Prussia, Bavaria, Saxony, Hanover, and Wirtemberg, each *four* votes.
Baden, E. Hessen, Grand-ducal Hessen, Holstein-Lauenburg, and Luxemburg, each *three* votes.
Brunswick, Mecklenburg-Schwerin, and Nassau, each *two* votes.
Sachsen-Weimar, Sachsen-Coburg, Sachsen-Meiningen, Sachsen-Hildburghausen, Mecklenburg Strelitz, Oldenburg, Anhalt-Dessau, Anhalt-Bernburg, Anhalt-Kocthen, Schwarzburg-Sonders-

hausen, Schwarzburg-Rudolstadt, Hohenzollern-Hechingen, Lichtenstein, Hohenzollern-Sigmaringen, Waldeck, Reuss, elder branch; Reuss, younger branch; Lippe-Schauenburg, Lippe-Detmold, Hessen-Homburg, Lubeck, Frankfort, Bremen, and Hamburg, each *one* vote.
Making a total of *seventy* votes in the assembly.*

The question, whether any matter shall be submitted to the General Assembly, is decided in the ordinary Diet by the plurality of votes; and in both assemblies the plurality of votes is the rule, with this differenee, that in the ordinary Diet an absolute majority is sufficient, while in the other, two-thirds are necessary; and when, in the ordinary Diet, the votes are equal, the president has a casting vote. In questions, however, that relate to the making or altering of fundamental laws, organic institutions, individual rights of the members in their quality of independent States, the admission of a new member, or affairs of religion, unanimity is required. The Diet is permanent; but may nevertheless, when its business is finished, be adjourned for a period not exceeding four months.

By the federative aet, the States engage to defend each other from every attaek; and when war has eommenced no member can enter upon separate negotiations. The members of the Confederation, reserving to themselves the right of forming allianees, are bound not to eontract any engagement eontrary to the seeurity of the Confederation; and the States engage not to make war on each other, under any pretext, but to submit their differences to the Diet, as mediator. If this does not sueceed, and a judieial sentence becomes necessary, that may be obtained by an *Austregal instanz*, *i. e.* by a judgment of the supreme judiciary tribunal of any one of the confederate States whieh the litigants may chuse; and to whose deeision they must submit without appeal.

The Confederation, as a eolleetive power, has the right of deelaring war, making peace, eontraeting alliances, negotiating treaties of every kind, required for its defence, and for maintaining the independence of the States which compose it. As, on the one hand, the Confederation is bound to defend its members against foreign attack, so, on the other hand, these are engaged not to give any provocation to foreign powers. When any of these members which have possessions beyond the limits of the Confederation, engage in war as European powers, the Confederation takes no part in it, unless the permanent Diet shall have deelared, by a plurality of voiees, that the territory of the Confederation is thereby endangered; in which case it has the power to provide the necessary means of defenee. When the territory of the Confederation is invaded by a foreign enemy, the state of war is established by the act of invasion. When the danger affects only one or other of the States, and that either of the contending parties appeals to the mediation of the Diet, it is at liberty to use its influence, without prejudice to its proseeuting general measures of security.

With respect to foreign affairs in general, the Diet is the organ of the Confederation; it watches over the maintenance of peace and of friendly relations with foreign powers; receives their ambassadors, and sends others, if neeessary; eonducts negotiations, and eoncludes treaties in the name of the Confederation; and interposes its good offices with foreign powers on behalf of the members of the Confederation who desire it, as well as with the confederate States themselves in matters where foreign powers require its intervention.

In the interior of the eonfederate territory, generally speaking, the preservation of peace is one of the prineipal objects of the union. With this view the Diet prevents any recourse to arms; assists those of its members whose possessions are threatened; takes care that their quarrels are submitted to an austregal judgment; and that the judgment be carried into execution.

In the interior of each of the confederate States the maintenanec of public order and tranquillity belongs to its own government; the Confederation interfering only in cases of negligence on the part of the government, of open revolt, or dangerous movements which threaten at the same time more than one of the States; and the government which has received assistanee in such cases, must inform the Diet of the cause of the troubles, and indicate the measures to be taken to preserve legal order, when re-established. In the case of a denial of justiee in any of the States, the Diet may reeeive eomplaints, and compel the government to do justice by judicial and le-

* The two principalities of Reuss-Schleitz, and Reuss-Lobenstein-Ebersdorf, which form together the younger branch of the house of Reuss, have only one vote in the Diet, although they form two States entirely independent of each other. The vote of Sachsen-Gotha is now possessed in common by those princes of the House of Sachsen who have inherited the estates of the late Grand-Duke of Gotha, viz. Coburg, Meiningen, and Altenburg. The lordship of Kniphausen, though declared to be a sovereign State, has no vote in the Diet, and joins its contingent with that of the Grand-duchy of Oldenburg, whose territory surrounds it.

gal methods. There ought to be legislative assemblies in all the countries of the Confederation; but it belongs to the princes to regulate this matter each in his own territory. The existing constitutions of the States, recognised as still in force, cannot be changed but by constitutional means; but, as by the fundamental principle of the Confederation, all the powers of sovereignty are vested in the head of each government, the sovereign cannot be compelled to admit the co-operation of assemblies, except in the exercise of rights specially determined. No particular constitution can hinder or restrain the confederate sovereign princes in the execution of the duties imposed upon them by the federal union. No assembly can refuse its prince the pecuniary means necessary for the performance of his federal duties, and for the administration of the government conformably to the laws of the country. In short, the internal legislation of the confederate States cannot place itself in opposition to the objects of the Confederation; and, in countries where the publicity is admitted by the constitution, care must be taken, that neither by the discussions themselves, nor by the publication of them through the press, the tranquillity of the country be compromised, nor the authority of the Confederation assailed. For cases in which differences arise between princes and their States, which cannot be settled by ordinary legal means, an act of the Diet, of 30th October 1834, created a tribunal of arbiters to be chosen by the prince and the States, in equal proportions, from a list of 34 jurisconsults and administrators, whom every three years the ordinary Diet appoints for this purpose.

The Diet holds its sittings at Frankfort on the Meyn, and has at its disposal a numerous army, which ought to be furnished by the confederate States in the proportion of one soldier for each hundred inhabitants, for the active army, and of one soldier for each two hundred inhabitants, for the army of reserve. This army, when assembled, is commanded by a general named by the Diet; and is arranged in ten divisions *(corps d'armé)*, and one division of infantry of reserve, viz. —

	Men.
Austria furnishes the 1st, 2d, and 3d, amounting to	94,822
Prussia „ the 4th, 5th and 6th, „	79,484
Bavaria „ the 7th, „	35,609
Wirtemberg, Baden, and Hessen Darmstadt, the 8th, amounting to	30,150
Saxony, E. Hessen, Nassau, and Luxemburg, the 9th, „	23,263
Hanover, Holstein-Lauenburg, Mecklenburg, Oldenburg, Brunswick, Hamburg, Lubeck and Bremen, the 10th, amounting to	28,067
And the 11th division of infantry of reserve, to complete the garrisons of the federal fortresses, is furnished by the Saxon duchies, Anhalt, Schwarzburg, Hohenzollern, Lichtenstein, Waldeck, Reuss, Lippe, Homburg, and Frankfort, amounting to . .	10,902
Total of the federal army, .	302,288

The Confederation possesses three federal fortresses; viz. Luxemburg, Mentz, and Landau; and intend to construct a fourth at Germersheim or Rastadt. The Prussians have the right of furnishing a part of the garrison of Luxemburg, but the King of Holland, as Grand Duke, appoints the governor and military commandant, subject to the approbation of the Diet. The garrison of Mentz is furnished by Austria, Prussia, and the Hessians, to whom it belongs. Landau is garrisoned by Bavaria. The Diet is charged to provide such organic institutions and defensive establishments as the safety of the confederate territory requires. It fixes the amount of the ordinary and extraordinary constitutional expenses; regulates the proportion to be paid by each of the members; and watches over the receipt and expenditure of the contributions.

INDUSTRY.—"The greater part of the land in Germany is held by those ancient feudal tenures which formerly prevailed in every part of Europe. The possessors of the soil, of whom in every State the sovereign is by far the greatest, have under them a species of customary tenants called subjects (Unterthäner), who have the cultivation of common fields divided into small portions, without the intervention of fences. As soon as the corn is removed from the field, the lord has the right of pasture; and owing to these circumstances it is impossible to deviate from an ancient practice, by which the different portions of the common land must be devoted to particular kinds of crop at specific periods. The rotation almost universally prescribed, and known by the name of the three-crop-culture, consists of a fallow, succeeded by two crops of grain. The fallow, however, generally bears a crop, which is usually either flax, peas, or, very commonly of late, potatoes; in consequence of a crop on the fallow, the land is seldom properly cleaned of weeds. To this fallow crop generally succeeds winter corn, either wheat or rye; but, in the north, the proportion of the latter to the former is as four to one, and in many parts, especially in Pomerania, ten to one. In the southern States, the two kinds of grain are nearly equally cultivated. To the

winter corn succeeds barley or oats, as the land is better adapted for the one or the other, or as may have been settled between the ancestors of the present lords and their tenants in remote periods. By this mode of cultivation, the earth yields but a small increase. The tenants can keep but little live stock, and therefore make but little manure. The live stock they do keep is generally fed throughout the winter with straw, and the addition recently of potatoes, with a small portion of corn; and what dung they do produce is consequently of a very weak quality. These tenants are commonly holders of small portions of land, which, in many instances, is necessarily divided at their decease among all their children; and thus the evil of the cottage system of small farms is clearly experienced. The villages are crowded with little proprietors, who have not either the conventional or the pecuniary power to improve the soil, who live in a state inferior to labourers, and who, from the smallness of their farms, can only obtain subsistence by living on the cheapest diet, which of late, as in Ireland, is principally potatoes. Upon this system, the number of husbandmen increases with considerable rapidity; they form soldiers, and when called out by the military conscriptions of their princes, are placed in a better situation than when living on their farms.

"In this condition of the community, the only land which can be well cultivated is the small portion of demesne which is in the hands of the lords, who, from their stock of cattle, could make manure to dress and improve the soil. These demesne lands are, however, though cultivated for the lords, ploughed by the tenants, who are bound by their tenures to do certain stipulated work for their superiors. The consequence of this is, that the work is badly performed, and at such seasons as best suit the tenant's own labour. The demesnes, too, feel the want of capital; for the lords have little besides their estates and the cattle upon them, and these being too generally left to the care of managers, who are less thrifty than as proprietors they would be, suffer considerably from that circumstance.

"The foregoing sketch is a description of the practice on the far greater portion of the land in Germany; and, in consequence of it, the soil, though superior in original fecundity to the greater part of England, is gradually deteriorating, and does not at present yield more than five eighths of what we raise upon the same quantity of land. From the poorer classes eating nothing but rye or potatoes, and from having three fourths of its population employed in agriculture, Germany is enabled to export corn in most years; but when an unpropitious season occurs the distress is dreadful, and is increased by the smallness of the different States, and the power being restricted of circulating grain freely from one to another; an evil which was severely felt and lamentably deplored in the calamitous year 1817.

"The land of Germany produces but little beyond the absolute and indispensable wants of its inhabitants, except in wine, flax, and wool. The culture of the vine is much less attended to than in France; and wine is the production of but a very small portion when compared with the whole extent of the country; whereas in France almost every part yields it. The quantity made in Germany is not calculated at more than about one sixth of what France supplies; the whole is computed to be nearly two million pipes of one hundred gallons each; but a very small part of this finds its way to foreign countries.

"The flax frequently forming, as before stated, the fallow crop, is important from the employment it affords, during the long cold nights of their severe winter, to the female members of the peasants' families, and from the trade it creates in the export of its productions in the form of yarn or linen cloth.

"Wool is generally the property of the lord, and its annual clip is frequently the principal revenue derived from extensive possessions. This has induced many to pay great attention to the improvement of the wool, and much of it, especially from Saxony, is superior to any that the Merino flocks of Spain afford. It is within the few years which have elapsed since the expulsion of the French, that the great extension of the breed of fine-woolled sheep has taken place. The implements of husbandry are in a very imperfect state, and as much so from want of information as from want of capital. The ploughs are generally small, light, and without a due curvature in the mould-board. The harrows are frequently of wood. That useful implement the roller is rarely seen; the waggons and carts are badly constructed, and the harness of all consists either of ropes or twisted straw.

"There are exceptions to these observations on the agriculture of Germany, but they are too few to merit any particular notice.

"Germany is generally a manufacturing country, and can supply itself with by far

the greater part of all the commodities which it needs. The manufacturers of that country are not placed in different districts, but in the same towns; and in almost every town of a moderate population, woollen, linen, cotton, silk, and iron wares are made. Thus their establishments are mostly upon a small scale, and they cannot avail themselves of those minute divisions of labour which are essential to the perfecting and to the cheapness of the goods. Linens are the most valuable article, and are made, from the coarse fabrics of Westphalia, which are used for negro clothing, to the finest shirting and table linens of Silesia and Saxony, and of all the intermediate qualities. Woollens of all kinds are made, and are sufficient for the consumption, so that those of England and France are scarcely needed; nor do the Germans allow that any foreign fine linen cloth is equal, either in quality or price, to those manufactured in Saxony, Silesia, and the newly acquired Prussian provinces on the Rhine, from wool of native growth. The cassimeres and Vigonia cloths, in that last-mentioned district in the towns of Eupen, Maehren, and Aachen, are preferred to any which are brought from other countries. The fabrics of cotton had much increased during the continental system of exclusion, and had arrived at a considerable degree of perfection; but the return of tranquillity has checked the progress of all, and annihilated many. The most considerable districts for these kinds of goods are the kingdom of Saxony, the Prussian provinces of Juliers, Berg, and Cleves, and on the banks of the Ems, in the Austrian dominions. The silk manufactures have never been considerable; some goods of the kind are made in many of the cities, but the principal establishments are in Vienna, at Roveredo in the Tyrol, at Cologne, and at Berlin. Leather, iron, steel, and the wares prepared from them, are made at home. Porcelain and common earthenware are well made, and the two great royal manufactories of the first at Berlin and Dresden equal any from Sèvre, from Worcester, or Etruria. The glassware of Bohemia, though of a very bad quality, is universally diffused, not only throughout Germany, but in most other parts of the world. Paper is a considerable article amongst the German manufactories. That for printing is coarse, and of a bad colour, and the writing paper is very imperfectly made. There are 506 mills, which deliver annually about 60,000 bales, but none of it goes to other countries. Chemical preparations are made upon an extensive scale, and comprehend alum, vitriol, smalts, white lead, Prussian blue, sal amonaic, and verdigris. Salt and sugar are refined for home consumption. Tobacco, snuff, wax, and oils from plants, are also supplied from domestic manufactories. The quantity of beer furnished by the breweries in every town in the north is very great, and the distilleries of ardent spirits from grain form a most extensive manufactory; vinegar is mostly prepared from grapes in those districts where they do not ripen sufficiently to be made into wine. The minuter articles, such as musical, mathematical, surgical, and optical instruments, with watches and clocks, are well and cheaply made. Wooden toys and plaited straw are important objects of employment to many of the inhabitants. Most of the fabrics of Germany are fettered by the laws of the guilds, or corporations, to which the masters are obliged to belong; and this acts as an impediment to their arriving at a high degree of perfection."*

Besides these branches of industry, we may notice also the immense produce of the press, so important in the kingdom and duchies of Saxony, in Hanover, Wirtemberg, and Bavaria, where very small towns rival in this respect some of the largest cities of Europe, London and Paris excepted. Of these Leipzig, Munich, Stuttgardt, Gotha, Weimar, Carlsruhe, Freyberg, Jena, Dresden, Gottingen, Hanover, Cassel, Frankfort on the Meyn, Augsburg, and Hamburg, are the most distinguished.

COMMERCE. — In spite of the division of Germany into so many States, each with its right of toll, and its custom-house regulations, the commerce of the country is very active and extensive; and promises to become more so daily, through the operation of the great commercial league entered into by most of the States under the influence of the Prussian government. It now comprises the whole confederation, except Hanover, Mecklenburg, Oldenburg, Brunswick, Lubeck, Hamburg, Bremen, Liechtenstein, and the Austrian and Danish provinces; and the avowed object is to free the trade of Germany from the restrictions under which it was laid by the conflicting interests and regulations of so many separate and independent states, and the rapacity of so many needy princes. In this respect it has been already of incalculable advantage to the country, as there is now an uninterrupted transit for merchandise over a tract extending from Memel on the Baltic, to the German Ocean, and the bor-

* *Encyclopædia Britannica*, Seventh Edition, vol. x. pp. 448, 449.

ders of France, Switzerland, and Austria, and containing a population of 26,000,000. Custom-houses are established along all the borders of this extensive region, and the duties collected are distributed among the different states in proportion to their interests. And although the effect of this measure is to give Prussia a preponderating influence, yet is it hailed by the patriotic party in Germany with unalloyed satisfaction, as the first step towards uniting the whole German nation in one body-politic, or state. This is the favourite theme not only of poets and philosophers, but even of the majority of the people; while, on the other hand, the adverse party, consisting of a portion of the aristocracy, and the persons employed about the petty courts, denounce the new system with great bitterness, and lament the degradation of their sovereigns, who, they say, are now merely the satraps of the Prussian government, by which this portion of their revenues is collected, and may be withheld from them. Another object of the league is said to be, to foster the manufacturing industry of the country, by imposing heavy duties upon, or altogether excluding, such articles of foreign manufacture as might injuriously compete with it; and on this account the league has been denounced by British merchants and politicians, as an attempt to injure, if not to ruin the trade of this country, in subserviency to the hostile policy of Russia. Smuggling across the borders of the league is carried on to a great extent, and must continue, so long as the interests of the sovereigns and landholders are so much at variance with the comforts of the people. This league, however, is principally calculated to promote the internal commerce and industry of Germany; while, to promote its external trade, two great companies have been established: — one of these, the Rhenish West-Indian Company, founded at Elberfeld in 1821, has already had a great and beneficial influence upon the industry of Northern and Western Germany. The other, the Elbe-American Company, founded at Leipzig in 1825, provides a great outlet for the manufactures of Saxony and Bohemia. Besides the productions of manufacturing industry already mentioned, the other principal articles of export are:—wool, corn, wood, iron, lead, tin, vitriol, honey, wax, leather, horses, cattle, hog's bristles, and other raw produce. The principal articles of import are: — wine, brandy, and other liquors, dry and salted fish, cheese, skins, tar, fish, oil, tallow, leather, potash, copper, iron, &c., sugar, coffee, tea, cacao, vanilla, rum, rice, spices, drugs, cotton, and silk. The transit trade is very considerable, and produces immense benefit to the towns that are its seats. The principal maritime commercial towns are: — Hamburg, Lubeck, Bremen, Embden; the principal inland trading towns are:—Frankfort, Leipzig, Augsburg, Nurnberg, Brunswick, Hanover, Cassel, Munich, Carlsruhe, Darmstadt, Weimar, and the other places named under the article Industry. The fair of Leipzig has no rival in the sale of books; and the trade of Hamburg is so great, as to rival that of some of the largest commercial cities in the world.

STATEMENT of the EXTENT of the STATES composing the GERMAN COMMERCIAL UNION, as in October 1836.

	Area in square English miles.	*Number of Inhabitants by which the division of Revenue is regulated.*	*Percentage proportion of Revenue allotted to each.*
1. Kingdom of Prussia, without Neuchatel, but including those countries whose population is added to this State upon the division of the revenue, and who are indemnified by Prussia,	109,126	13.690,653	54.56
2. Kingdom of Bavaria, including some Saxon enclaves,	31,258	4,251,118	16.94
3. Kingdom of Saxony,	5,748	1,595,668	6.36
4. Kingdom of Wirtemberg, and the Principalities of Hohenzollern,	8,150	1,631,779	6.50
5. Electorate of Hessen-Cassel,	3,853	640,674	2.55
6. Grand-duchy of Hessen-Darmstadt,	3,793	769,691	3.07
7. The Thuringian States, or Confederation,*	4,950	908,478	3.62
8. Grand-duchy of Baden, with part of H. Sigmaringen,	5,915	1,232,185	4.91
9. Duchy of Nassau,	1,750	373,601	1.49
10. Free city of Frankfort,	92	60,000	
TOTAL,	174,635	25,153,847	100.

* *Thuringia* comprises the States of Weimar, Coburg-Gotha, Meiningen, Altenburg, Schwartzburg, and Reuss; with the Hessian district of Schmalkald; the Bavarian district of Kaulsdorf; and the Prussian districts of Erfurt, Schleusingen, Ziegenruck, and the villages of Kischlitz and Mollschutz.

The external frontier comprises an extent of 4896 lineal miles, which, by the returns made in 1836, are thus divided: —

Prussia,	3565	Baden,	278
Bavaria,	697	Hessen-Cassel,	75
Saxony,	267	Wirtemberg,	14

The League has lately formed a commercial treaty with Holland; and negotiations for the same purpose are pending with Switzerland and Belgium; the effect of which treaties will be virtually to include these countries in the League.

POLITICAL DIVISIONS. — As already mentioned, Germany is parcelled out among forty Sovereign States. The States belonging to Austria, Prussia, Denmark, and Holland, will be described under these heads. The description of the others will follow the subjoined table.

SOVEREIGN STATES.	*Area in square miles.*	*Population.*	*Date of census.*	*Revenue in Pounds Sterling.*	*Contingent to the army of the Confed^{n}.*	*Contribution to the federal revenue.* florins.	kr.
Austrian Germany,	75,979	11,404,589	1834	7,050,000	94,822	9,430	50
Prussian Germany,	71,461	10,908,010	1838	5,000,000	79,484	7,905	21½
Bavaria,	31,392	4,315,469	1837	2,500,000	35,600	3,540	42½
Saxony,	5,772	1,652,114	1837	720,000	12,000	1,193	30
Hanover,	14,769	1,706,280	1838	920,000	13,054	1,298	15
Wirtemberg,	7,632	1,634,654	1836	941,400	13,955	1,387	55
Baden,	5,918	1,264,482	1837	1,086,000	10,000	994	35
Electoral Hessen,	4,439	812,540	1837	497,000	5,679	564	47½
Hessen-Darmstadt,	3,761	782,671	1837	548,000	6,195	616	10
Holstein and Lauenburg,	3,719	467,596	1835	240,000	3,600	358	2½
Luxemburg,	2,308	305,000	1830	180,000	2,556	254	15
Brunswick,	1,507	251,000		165,400	2,096	208	27½
Mecklenburg-Schwerin,	4,845	482,652	1838	230,000	3,580	356	5
Nassau,	1,757	382,981	1838	181,000	3,028	301	7½
Sachsen-Weimar-Eisenach,	1,419	245,813	1838	195,400	2,010	199	55
Sachsen-Coburg-Gotha,	799	137,940	1838	120,000	1,116	111	0
Sachsen-Meiningen-Hildburg-hausen,	888	148,078	1837	110,000	1,150	114	22
Sachsen-Altenburg,	510	121,590	1837	68,200	982	97	39
Mecklenburg-Strelitz,	767	85,257	1835	50,000	718	71	22½
Oldenburg and Kniphausen,	2,421	264,154		150,000	2,829	216	35
Anhalt-Dessau,	340	60,945	1837	50,000	529	52	40
Anhalt-Bernburg,	340	45,135	1835	37,500	370	35	50
Anhalt-Koethen,	326	40,153		37,500	325	32	17½
Schwarzburg-Sondershausen,	359	54,080	1834	24,000	451	44	52½
Schwarzburg-Rudolstadt,	410	65,604	1837	32,500	539	53	40
Hohenzollern-Hechingen,	138	21,000		12,000	145	14	25
Lichtenstein,	53	5,880		1,700	55	5	30
Hohenzollern-Sigmaringen,	388	42,870	1833	30,000	356	35	22½
Waldeck,	461	56,000	1831	35,000	519	51	35
Reuss (elder branch),	145	30,041	1833	14,000	223	22	7½
Reuss (younger branch),	448	68,854	1835	47,000	522	51	55
Schaumburg-Lippe,	206	27,600		21,500	240	23	52½
Lippe-Detmold,	437	76 730	1828	49,000	691	68	40
Hessen-Homburg,	166	23,000		18,000	200	19	55
Lubeck,	142	47,000		43,200	407	40	25
Frankfort,	91	54,000		63,300	479	47	35
Bremen,	106	57,800		83,200	485	48	15
Hamburg,	151	140,700		150,000	1,298	129	5
TOTALS,	246,770	38,300,365		21,703,200	302,388	*29,980	0

KINGDOM OF BAVARIA.

(BAIERN.)

This State consists of two perfectly distinct portions; the larger situate in the basins of the Danube and the Meyn; and the smaller to the westward of the Rhine, on the north-eastern border of France. It contains the ancient duchy of Bavaria; a part of the palatine county of the Rhine, the bishopric of Wurtzburg, and several other adjacent territories, portions of the old German empire. The King is the representative of two of the electors, viz. the Duke of Bavaria, and the Pfalzgraf, or Count Palatine of the Rhine, and is himself the head of the latter family, which succeeded to the duchy of Bavaria, upon the extinction of the ducal branch, in 1779. The kingdom was constituted by the Emperor Napoleon, upon the dissolution of the German empire, in 1804, and received its present extension in 1815. The public revenues amount to 25,014,000 florins, or about £2,501,400 sterling, raised from nearly as great a variety of imposts as in Britain. The army amounts to about 57,000 men of all arms, of whom about 17,000 are always on furlough, or absent on leave. The government is a sort of constitutional monarchy; but the preponderating influence of the Federal Diet is a complete bar to its freedom of action.

In 1817, the kingdom was divided into eight Circles, as stated in the following table: —

Circles.	*Cities and Towns, with their Population.*
Isar,	MUNCHEN (MUNICH), 95,000; Landshut, 8500; Freising, 3600; Reichenhall, 2500; Laufen, 2600: Traunstein, 3000; Berchtesgaden, 1400; Landsberg.
Regen,	Ratisbon, 26,500; Amberg, 8000; Ingolstadt, 6000; Eichstadt, 7000.
Unter Donau,	Passau, 10,500; Straubing, 7000; Degendorf, 2800; Hafnerzell. 2400.

* The florin of convention is worth very nearly 2s. 1d. sterling. Each florin contains 60 kreutzers: and the contribution to the federal revenue is reckoned, as above, in florins and kreutzers.

Circles.	*Cities and Towns, with their Population.*
Ober Donau,...	Augsburg, 34,000; Neuburg, 7000; Donauwerth, 3000; Memmingen, 8000; Kempten, 6000; Lindau, 6000; Kaufbeuren, 4500; Dillingen, 3300; Guntzburg, 3000.
Rezat,.....	Anspach, 17,000; Furth, 17,000; Erlangen, 12,000; Rothenburg, 8000; Schwabach, 7500; Dinkelsbuhl, 7000; Nordlingen, 7600; Windsheim, 3500; Nurnberg, 38,000; Oettingen, 3200.
Ober Meyn, ...	Bayreuth, 14,000; Bamberg, 22,000; Hof, 8000; Kulmbach, 4500; Wunsiedel, 3000; Kronach, 3000; Vorchheim, 3100; Banz.
Unter Meyn,....	Wurtzburg, 22,000; Schweinfurth, 7000; Karlstadt, 2200; Kitzingen, 5000: Aschaffenburg, 7000: Lohr, 3500; Neustadt, 1700; Bruckenau, 1800; Bischoffsheim, 1800.
Rhein,.....	Speyer, (Spire) 7500; Landau, 6000: Zwey-brucken, or Deux-ponts, 6000; Kaiserslautern, 5600; Pirmasens, 5000; Frankenthal, 4000; Neustadt-an-der-Hardt, 6000; Anweiler, 2600; Durkheim, 4200; Otterberg, 1900; Kussel, 2000; Germersheim, 2000.

But by an ordonnance, dated 29th November 1837, these divisions were considerably changed, and the original and historical names restored; the new division consisting also of eight circles, viz. 1. *Upper Bavaria (Oberbaiern)*, comprising the circle of Isar (except the town of Landshut and the districts of Landshut and Vilsbiburg); the districts of Altœtting, Burghausen, Ingolstadt, Aschach, Friedberg, Rein, and Scrabenhausen. 2. *Lower Bavaria (Niederbaiern)*, comprising the circle of Unter Donau, (except the districts of Cham, Burghausen, and Altœtting); the town of Landshut, and the districts of Landshut, Vilsbiburg, Abensberg, Kellheim, and Pfaffenberg, and the lordship of Zaizkofen. 3. The *Palatinate (Pfalz)*, comprising the circle of the Rhein. 4. The *Upper Palatinate* and *Ratisbon (Oberpfalz und Regensburg)*, comprising the circle of Regen (except the districts of Ingolstadt, Abensberg, Kellheim, Pfaffenberg, Beilngries, Eichstædt, and Kipfenberg); the districts of Cham, Hippolstein, Eschenbach, Kemnath, Neustadt on the Waldnaab, Tirschenreuth, and Waldsassen. 5. *Upper Franconia (Oberfranken)*, comprising the circle of Ober Meyn (except the districts of Eschenbach, Kemnach, Neustadt on the Waldnaab, Tirschenreuth, and Waldsassen; and the district of Herzogenaurach. 6. *Middle Franconia (Mittelfranken)*, comprising the circle of Rezat (except the districts of Herzogenaurach, Hippolstein, Monheim, Nordlingen, and Wemding); the lordships of Bissengen, Harburg, Mænchsroth, Oettingen, and Wallerstein; the districts of Beilngries, Eichstædt, and Kiptenberg. 7. *Lower Franconia (Unterfranken)*, and *Aschaffenburg*, comprising the circle of Unter Meyn. 8. *Swabia (Schwaben)*, and *Neuburg*, comprising the circle of Ober Donau (except the districts of Aichach, Friedberg, Rein, and Scrobenhausen); the districts of Monheim, Nordlingen, and Wemdig; the lordships of Bissengen, Harburg, Mænchsroth, Oettingen, and Wallerstein. The population in 1840 was divided thus:—Oberbaiern, 690,492; Niederbaiern, 522,118; Oberpfalz, 457,608; Pfalz, 579,120; Oberfranken, 486,222; Mittelfranken, 511,937; Unterfranken, 579,279; Schwaben, 544,201; total, 4,370,977.

MUNCHEN (MUNICH), the capital of the kingdom, is situate upon the river of Isar, 193 miles S.E. of Frankfort, and 220 W. of Vienna, in a flat and sterile plain, entirely destitute of beauty. It has been enlarged and embellished in a very remarkable manner since the beginning of the present century, and is now one of the finest cities in Germany. The irregularity of its original plan, and some relics of the middle ages, which still appear in the midst of the modern edifices, are compensated for by many wide and straight streets bordered with foot-pavements, and lined with elegant houses and magnificent hotels. The most remarkable buildings are:—the *Hof*, or King's Palace, one of the largest in Europe, somewhat irregular in its plan, but now about to be renewed and completed according to the designs of Baron Klenze; the *Pinacothek (picture-gallery)*, a large and fine building, containing one of the richest collections of paintings in Europe; the *Glyptothek (sculpture-gallery)*, also a fine new building, with a splendid collection of sculptures; the *New Palace*, intended for the reception of the precious collections of the Academy of Arts and Sciences, the immense national library, and the archives of the kingdom; the *Palace Max*, containing fine collections of designs, miniatures, and works in ivory; the Palace of the Duke of Leuchtenburg; the Academy of Sciences; the town-house, and the new theatre, one of the finest in Europe; and a magnificent obelisk, formed of captured cannon, raised in 1828 to the memory of the Bavarian soldiers who perished in Napoleon's Russian campaign. Munich is in the first rank of European cities in respect of its scientific and literary establishments, the principal of which is the university, recently transferred from Landshut, and greatly extended and improved.—Population, 95,000.

Near Munich are several places worth notice:—*Nymphenburg*, a magnificent royal palace, built on the plan of that of Versailles, and beside it the royal manufactory of porcelain; *Schleissheim*, another royal palace, reputed the most magnificent in Germany; *Gross Hesèlohe*, a charming place, much frequented on holidays; *Biederstein*, a pretty palace, with fine gardens, belonging to the Queen-Dowager, and nearly 30 miles S. by E.; *Kreuth*, a village, in a romantic situation, with well frequented sulphureous baths, and a fine monument of King Maximilian; and the castle of *Tegernsee*, where the king passes a part of the summer; both upon the Lake of Tegern.

Nurnberg, an ancient imperial city, is situated on the Pegnitz, in the middle of a sandy but fertile plain, 90 miles N. by W. of Munich. Few towns in Europe present a livelier picture, than is to be found in the interior arrangements of its buildings and the furniture of its houses, of the manners and customs of the middle ages, when Nurnberg was one of the richest, most industrious, and most commercial cities in Europe. It still maintains an important rank for trade and industry, though its population is reduced to 38,000.

Augsburg, another late imperial city, is situate near the confluence of the Wertach with the Lech, 37 miles N.W. by W. of Munich. It possesses an arsenal, which is the principal depot of arms for the kingdom; it has a very ancient and interesting Gothic cathedral, and its Bishop's Palace still contains the hall where the Protestant Confession of Faith was presented to the Kaiser, Charles V. in 1530. But this cradle of Protestantism is filled with all sorts of Catholic relics, and records of miracles; every street bears witness to the worship of the Virgin Mother of God, and there is hardly a house but has its painted, carved, or plastered saint on its front. Augsburg is noted for its goldsmith work, jewellery, horologerie, mathematical and physical instruments, cotton factories (one of which, lately erected, contains 30,000 spindles, and 800 looms), tanneries, and many other productions, which place it in the first rank among the manufacturing and commercial cities of Germany. It is connected with Munich by a railway.—Population, 34,000. At *Oberhausen*, near Neuburg, in this circle, is the burial place of Latour d'Auvergne, the titular first grenadier of France, killed by an Uhlan in 1800.*

Ratisbon, or *Regensburg*, also a late imperial city, is situate on the right bank of the Danube, at its confluence with the Regen, 65 miles N.N.E. of Munich. Its streets are narrow, but well paved, and lined with very high houses, built in the German style. It contains several fine buildings, particularly the Rath-haus (Town-house), in which the diet of the empire used to assemble, from 1662 till

* His name is still borne on the roll of the regiment to which he belonged; and when it is called, the oldest soldier of his company answers—"Mort sur le champ d'honneur."

its dissolution in 1806; the cathedral; the palace of the Prince of Tour and Taxis; the imperial abbey of St. Emeran, remarkable for its great extent, and its fine collections of articles of science and the fine arts; and the bridge across the Danube, 1091 feet long. Its trade is very considerable, and it is noted for goldsmith work, jewellery, and beer.—Population, 26,500. The citizens have erected a monument, in the form of a Doric temple, to the memory of their illustrious townsman John Kepler, near his burial place. Six miles east of Ratisbon, upon a hill rising boldly from the very edge of the Danube, the King has erected a splendid peripteral temple, in the Doric style of architecture, to be named *Valhalla*, for the reception of the busts or statues of all the great men of Germany, whether distinguished in arts or in arms, whether poets or philosophers, statesmen or princes. It stands on the north bank of the river, from which the ascent will be by a flight of 400 steps.

Wurzburg, lately the capital of a sovereign bishopric, is situate upon the Meyn, 135 miles N.W. by N. of Munich, in a country remarkable for cultivation and beauty. It is far from being a fine city, but possesses nevertheless several handsome buildings, as the castle, one of the finest in Germany, which is appropriated as the residence of the Queen-dowager of Bavaria; the cathedral; the hospital Julius, remarkable for its extent, fine organization, its scientific collections, and botanic garden. The University is one of the oldest and most celebrated in Germany. Upon a steep rock, 400 feet high, without the walls, is the citadel of Marienberg, or Frauenberg, regarded as a good fortress. Wurtzburg is noted for industry and trade, and has a population of 23,000. *Aschaffenburg*, also on the Meyn, 20 miles S.E. of Frankfort, has a free port, and a castle magnificently furnished, with a considerable library, fine collections of engravings and pictures, and an English garden. About seven miles north, midway between Aschaffenburg and Hanau, is the village of *Dettingen*, where a battle was fought in 1743, between the British and the French.

Bamberg is a fine, well-built, industrious, commercial, archiepiscopal city, situate upon the Rednitz, 124 miles N. by W. of Munich.—Population, 22,000. *Baireuth*, 25 miles E. by N. of Bamberg, on the Rother Meyn, is a busy commercial town, with 13,000 inhabitants. *Kronach*, 20 miles N. by W. of Baireuth, is a place of considerable note for its coal-mines, and is the entrepôt of the timber trade, which this country carries on along the Rhine as far as Holland.

Anspach, situate at the confluence of the Holzbach with the Lower Rezat, 95 miles N.W. by N. of Munich, is a pretty city, busy and commercial, with 14,000 inhabitants. *Farth*, near Nuremberg, at the confluence of the Rezat and the Pegnitz, is one of the most industrious towns in Germany; has a very extensive commerce, a Jewish high school which the Jews consider as a university, and a population of 17,000.

Passau, an episcopal and commercial city at the confluence of the Inn and the Ilz with the Danube, is strongly fortified, ranking next in that respect to Landau.—Population, 10,500. In the citadel is a holy shrine, with an image of our Lady, the Virgin Mother of God, and Queen of Heaven, which is visited by multitudes of pilgrims; and which is said to have shed tears when the French were in possession of Passau. A liquor is distilled from her breasts, which the profane declare to be spring water, but which to the faithful recipient tastes like rich milk.

Speyer, or *Spire*, a small commercial town on the left bank of the Rhine, in the Palatinate; but more noted in its histories than its present importance. It was the winter quarters of Julius Cæsar; and the Merovingian and Carlovingian kings of the Franks and the Saxon emperors of Germany often made it their residence. It has an ancient cathedral, which was repaired by the King of Bavaria. *Landau*, upon the river Queich, 17 miles S.W. of Speyer, and 55 miles N.N.E. of Strasburg, is one of the federal fortresses of Germany. It forms a regular octagon, having eight curtains covered by seven bulwarks, three redoubts, seven lunettes, and a fort or citadel, with three whole and two half bastions, the whole being surrounded with broad ditches supplied by the Queich and a canal. *Zweybracken*, or, in French, *Deux-ponts* (*Two Bridges*), though a considerable town, is only noted as the former residence of the palatine dukes of Deux-ponts, and for editions of the classics, known as the *Bipontine* editions. *Germersheim*, a small town on the Rhine, at the mouth of the Queich, was fixed upon as a proper place for one of the federal fortresses; but the fortifications have not yet been constructed, and another place has attracted the attention of the Diet.

The only other places worthy of particular notice in Bavaria are:—*Lindau*, a small fortified town built on three islands, with a harbour on the Boden-See, named *Maximilian's Hafen*, a station for the steam-boats which navigate the lake; *Hochstet*, a village on the Danube, midway between Donauwærth and Dillingen, about a mile to the east of which is the field of *Blenheim*, where the Duke of Marlborough and Prince Eugene of Savoy gained a great victory over the French and Bavarians in 1704; *Hohenlinden*, 20 miles E. of Munich, noted for a victory gained by General Moreau over the Austrians in December 1800. *Landsberg*, 22 miles S. of Augsburg, and 33 W. of Munich, an ancient town, near the extremity of an immense plain, where the Huns were defeated by the Emperor Otho the Great, in the year 954. *Kaiserslautern*, in the Palatinate, a flourishing manufacturing town, but chiefly remarkable for the remains of a magnificent castle built by the Emperor Frederick Redbeard (Barbarossa), who, in the year 1230, threw into a pond at this place a pike, with a ring attached, bearing a Greek inscription, and which was taken by the Elector Philip in 1497, having then lived 267 years! and the three spas, that of *Kissengen*, 36 miles, *Bocklet*, 40, and *Bruckenau*, about 40 or 45 miles to the north and north-east of Wurzburg, which are very much frequented by invalids and loungers. Near Kissingen is a copious salt spring, which discharges 40 cubic feet of water in a minute, at the temperature of 40° Fahrenheit.

KINGDOM OF WIRTEMBERG.

This small kingdom adjoins Bavaria on the west, and is situate in the middle of the ancient Swabia, extending also into Franconia. It is one of the kingdoms formed under the auspices of Napoleon, at the period of the dissolution of the German empire, in favour of the then Duke of Wirtemberg. It is divided into four circles:—

Circles.	*Population* 15 *Dec.* 1840.	*Cities and Towns.*
Neckar, ...	467,374..	Stuttgardt, 32,000; Ludwigsburg, 7000; Heilbronn, 8000; Esslingen, 6000; Cannstadt, 4000; Jaxtfeldt; Asperg, 1400; Weiblingen; Marbach; Sindelfingen; Kochendorf.
Schwarzwald, ... (Black Forest.)	452,515..	Reutlingen, 10,000; Tubingen, 8000; Calw, 4000; Urach, 3000; Ehningen, 4700; Rottenberg, 5800; Freudenstadt, 3100; Ebingen, 4100; Tuttlingen, 4500; Schwenningen, 3000; Rottweil, 3100; Wildbad.
Jaxt, or Jagst, ...	375,257..	Elwangen, 2600; Gmund, 6000; Creilsheim, 2800; Shorndorf, 3900; Ochringen, 3200; Mergentheim, 2500; Hall, 6500; Heidenheim; Giengen; Bartenstein; Aalen; Taxis.
Donau (Danube), ..	387,192..	Ulm, 14,000; Biberach, 4500; Goppingen, 4700; Kircheim, 4700; Ehingen, 2800; Geislingen, 2100; Ravensburg, 3600; Isny, 1800; Altorf, 2300; Buchorn, or Fiedcrickshafen, 900; Munsingen.
	1,682,338	

There are four garrison towns in the kingdom, viz. Stuttgardt, Ludwigsburg, Ulm, and Heilbron.

STUTTGARDT, the capital, is situate upon the rivulet Nesenbach, not far from its confluence with the Neckar, in a deep valley, which is infested by malaria in summer, and in winter by mists and fogs, and surrounded with hills covered with vineyards and orchards arranged in terraces to their very pinnacles. The King's palace is a most imposing edifice, opening on one side into a fine park, and on the other into a spacious square planted with trees. The environs are far more interesting than the city itself, the surrounding hills affording endless room for excursions. In the neighbourhood are:—*The Solitude*, a magnificent royal castle built on a hill, with a charming view; *Rosenstein*, a magnificent royal residence on a hill, lately built; *Cannstadt*, on the Neckar, a small town with several manufactures, and well-frequented baths, and near it *Bellevue*, a royal pleasure-house with fine gardens; *Rotenberg*, upon a hill, from which are seen the ruins of the first residence of the princely family of Wirtemberg, and where has been lately erected *The Favorite*, a palace where the King passes the fine weather; and *Hohenheim*, formerly a royal palace, but now the Forest Institute, with schools of agriculture and rural economy, and a large nursery. Stuttgardt ranks as the third town in Germany in respect to its commerce in literary productions, Leipzig and Berlin only being before it.

Ludwigsburg, the capital of the circle of the Neckar, 10 miles N. of Stuttgardt, is a pretty little town, with a royal palace (*Ludwigslust*), a theatre, a royal cannon-foundry, manufactures of cloth, linen, and porcelain, a military academy, an orphan hospital, and a house of correction for females. At *Asperg*, four miles N.W., is the castle of *Hohenasperg*, used as a state prison. *Heilbronn*, on the Neckar, an industrious trading town, with stone and gypsum quarries, and a canal, by means of which loaded barges can pass along the Neckar from Mannheim to Cannstadt.

Tubingen, on the Neckar, 20 miles S. by W. of Stuttgardt, is a small town distinguished for its scientific and literary establishments, and particularly for its University, one of the most celebrated in Europe, which has a rich library, and fine collections of natural history, &c., an observatory, and a botanic garden. In its old church are collected 13 splendid tombs of the Counts and Dukes of Wirtemberg, the earliest bearing date in 1454. *Reutlingen*, the capital of the circle, was formerly an imperial free city, and is still distinguished for the industry of its citizens. Some miles south of Reutlingen is a remarkable cavern called the *Nebelhohle;* and near it the remains of the castle of *Lichtenstein*, celebrated through all Swabia for its fine situation on a lofty rock. *Wildbad*, a small village in a valley of the Black Forest, 1323 feet above the level of the sea, and 30 miles W. of Stuttgardt, contains baths of thermal waters of the natural temperature of from 23½° to 30° Reaumer's, or from 84° to 100° of Fahrenheit's thermometer.

Ulm, at the confluence of the Blau with the Danube, formerly an imperial free city, has an industrious population, and a considerable transit trade. Its town-house is noted for a fine clock, and its ancient cathedral is one of the finest churches in Germany. Ulm is celebrated in modern history for the capture of General Mack and his army of 30,000 Austrians, by Napoleon, in 1805.

The only other places in the kingdom worthy of notice are:—the celebrated abbey of *Veingarten*, near Altorf, now changed into an orphan-house, and whose magnificent church possesses one of the largest organs in existence; *Frederickhafen*, or *Buchorn*, a small town on the Lake of Constance, with a free port, and a royal pleasure-house; *Kniebis*, the famous pass of the Black Foreet, near Freudenstadt.

GRAND-DUCHY OF BADEN.

This State consists of a long narrow strip of country, extending along the east and north sides of the Rhine, from near Mannheim to the Lake of Constance, a distance of nearly 300 miles along the river, and nearly all included in the ancient Swabia. Two sides border on France and Switzerland; the greater part of the remaining border is formed by Wirtemberg. The general aspect of the country is more mountainous than level. The Black Forest, with part of the Odenwald, comprises one third. The climate, except in the mountain districts, is mild and salubrious, and the soil fertile. The extensive forests are sources of great wealth to the inhabitants; and the numerous rivers that intersect the country, not only diffuse fertility, and add to its picturesque beauty, but, several of them being navigable, encourage commerce. Though the Germans compare the general form of the duchy to a *blutwurst* (black pudding), owing to its disproportionate length, yet, at the same time, they regard Baden proper as the paradise of Germany. (*Das Eden Deutschlands.*) The government is a limited or constitutional monarchy. The grand-duchy is divided into four circles:—

Circles.	*Popn.* 1840.	*Towns.*
Mittel Rhein,.....	437,272	CARLSRUHE, 20,000; Durlach, 4400; Bruchsal, 7000; Pforzheim, 6000; Rastadt, 5600; Baden, 4200; Ettlingen, 3400; Ofenburg, 3700; Lahr, 6000; Oppenau, 1900: Fort Kehl; Petersthal.
See,.....	186,556	Constance, 5300; Ueberlingen, 2700; Supplingen, 800; Villingen, 3600; Neustadt, 1400; Donaueschingen, 2800; Ludwigshafen, late Sernatingen, a small town with a harbour on the lake.
Ober Rhein,.....	340,934	Freyburg, 15,000; Breisach, 3000; Schopsheim, 1200; Todtnau, 1300; Endigen, 3100; Lorracb, 2300; Schonwald, 1200; Badenweiler, 212; St. Blasien.
Unter Rhein,.....	332,205	Mannheim, 22,800; Heidelberg, 13,500; Schwetzingen, 2400; Sinsheim, 2700; Weinheim, 5000; Wertheim, 3600; Bischofsheim, 2200; Walldurn, 2500; Philippsburg; Mosbach; Eberbach.
	1,296,967	

CARLSRUHE, or KARLSRUHE (Charles's rest),* the capital of the State, is a fine modern city, regularly built in the form of a fan, with its principal streets, 32 in number, diverging from the grand ducal castle; 80 miles S. of Frankfort, and three miles east of the Rhine. The castle or palace is a neat pretty building, with a fine collection of paintings, mostly French. The pleasure-grounds and park attached are very extensive and well kept, but gloomy. The streets of the city are broad, well paved, and clean. *Leopoldhafen* is the port of Carlsruhe on the Rhine. In the immediate neighbourhood are:—*Amaliens-ruhe*, and *Ludwigslust*, two palaces, with fine gardens; and a few miles farther, *Durlach*, the former residence of the Margraves of Baden, with a college and a mint. At *Bruchsal*, 12 miles N.E. of Carlsruhe, is a fine castle of the Grand-duke, and a saline. *Pforzheim* is the most industrious town in the grand-duchy, and has a fine establishment of baths. *Rastadt*, 16 miles S.S.W. of Carlsruhe, has an establishment of baths, and a fine palace, built on the plan of that of Versailles, in which were held the two Congresses in 1714 and 1790. *Baden*, from which the grand-duchy takes its name, called also *Baden-Baden*, is a pretty little town, 20 miles S. by W. of Carlsruhe, and five from the Rhine, celebrated for its mineral waters, which are frequented by thousands of strangers. The town, irregular and ill built, is partly situate on a high acclivity, and partly scattered along the banks of a rivulet, in a beautiful valley, adorned with vineyards, orchards, and meadows, and inclosed by fine wooded heights crowned with picturesque ruins. The waters are principally used for bathing,

* It owes this name to the circumstance of its having been built in consequence of a dream of one of the Margraves of Baden named Karl.

and are calculated to relieve rheumatic complaints, contractions of the limbs, and diseases of the skin. There are altogether 13 warm springs; the hottest, called the Holle, rises to 54° Reaumer, and is only used for scalding hogs and poultry. The principal spring, called the Ursprung, produces 7,500,000 cubic inches of water in 24 hours, with a temperature of 153½° Fahrenheit. These waters attracted the attention of the Romans at a very early period, and the town of Baden was their *Civitas Aurelia Aquensis*.

Constanz (*Constance*), situate on the south side of the strait which connects the two divisions of the Boden See, is an ancient Roman town, but very much fallen from its former importance, when it counted 30,000 citizens. It is an episcopal city, has some trade, and a port on the lake. *Petershausen*, an ancient convent on the north side of the strait, has been converted into a grand-ducal palace. At *Ueberlingen* are mineral baths, and near it is the village of *Supplingen*, in which a great part of the houses are cut out of the rock. At *Donaueschingen*, a neat pretty town, is the fine castle of the Prince of Furstenberg, in the court of which is the fountain of the Donau, considered to be the source of the Danube.

Freyburg, the ancient capital of the Brisgau, and the see of an archbishop, is a thriving commercial town, situate upon the Treisam, an affluent of the Rhine, 75 miles S.S.W. of Carlsruhe. The gothic minster or cathedral is reckoned one of the finest churches in Europe, and its spire is considered a masterpiece of architecture. Its university is of considerable importance, and, together with the garrison, adds much to the animation of the town. South-east of Freyburg is the *Hollenthal* (infernal valley), through which General Moreau effected his celebrated retreat in 1796. It is a most stupendous defile, so narrow as barely to leave room for the road and the roaring rivulet that rushes through it, while the rocks on both sides are so lofty, and approach so near each other, as totally to exclude the rays of the sun. Yet through this dangerous gorge, nearly a mile in length, did Moreau conduct his army in the most perfect order, with an enemy behind him. *St. Blasien*, on the Alb, 20 miles S.E. of Freyburg, is the seat of a princely abbey, whose vast buildings have been converted into a great cotton-spinnery, and a manufactory of fire-arms and other weapons of war. *Schonwald* is the centre of the straw-hat manufacture; and *Badenweiler*, 18 miles S.W. of Freyburg, a small town, with only 212 permanent inhabitants, is very much frequented on account of its baths. In 1784 a vast Roman bath was discovered, containing 50 rooms and 56 vestibules, and an altar dedicated to Diana Anoba. A fine bath-house has been lately erected. The *Blauen*, one of the highest hills of the Black Forest, rises behind Badenweiler. On the Rhine, to the eastward of Basel, are the forest towns of *Serkingen* and *Waldshut*; the former celebrated as the cradle of Christianity in this part of the country.

Mannheim, or *Manheim*, is situated in the angle formed by the confluence of the Rhine and the Neckar, on the east side of the former, and south side of the latter river. It is the largest city of Baden, and one of the finest in Germany, as well on account of the tastefulness of its buildings as of the regular plan of its streets. It was formerly the residence of the Electors-palatine of the Rhine, whose palace is a very large building, with a rich library, a cabinet of natural history, a picture-gallery, a collection of antiquities, casts of ancient statues, and a garden. Mannheim carries on a considerable trade, and has been declared a free port. Its fortifications have been demolished, and their site converted into gardens and walks. — Population, 22,800. *Heidelberg*, a small city, with a fine bridge on the Neckar, 12 miles S.E. of Mannheim, is chiefly noted for its University, which possesses a rich library, a botanic garden, an experimental garden of rural economy, an observatory, &c. Upon the slope of the Geisberg, near the town, are the ruins of the magnificent castle of the Electors-palatine, destroyed by fire in 1761; in one of whose cellars is the famous wine-tun; and at *Schwetzingen*, five miles W., is a fine castle of the Grand-duke's, with an English garden, one of the largest and finest in Germany, and particularly noted for its collection of the alpine plants of Europe.

HOHENZOLLERN.

The remainder of Swabia forms the two small principalities of HOHENZOLLERN-HECHINGEN, and HOHENZOLLERN-SIGMARINGEN, which are almost entirely surrounded by the territory of Wirtemberg, and touch Baden on their south-west side. *Hechingen*, a small town with 3000 inhabitants on the Starzel, is the capital of the one principality; and *Sigmaringen*, a still smaller town on the Danube, is the capital of the other. Near Hechingen is the ancient castle of *Hohenzollern*, upon a hill 800 feet high, remarkable as the cradle not only of these princes, but also of the royal family of Prussia, who are a cadet branch of the house of Hohenzollern. The other notable places are: — *Grosselfingen*, 1400 inhabitants; *Trochtelfingen*, 1100; and *Haigerloch*, 1300.

POSSESSIONS OF THE HESSIAN PRINCES.

These lie contiguous, to the north, north-east, and south of Frankfort, and are divided by the Rhine and the Meyn. All the princes, being descended from a common ancestor, bear his title of Landgrave of Hessen. The family is divided into two branches; the elder of which is subdivided into the branches of Cassel and Philipsthal; and the younger into the branches of Darmstadt and Homburg. The Landgraves of Hessen-Philipsthal are subjects of Hessen-Cassel; but the heads of both branches of the cadet family are, as well as Cassel, sovereign members of the Confederation. The three States are distinguished by the names of *Hessen-Cassel*, or *Electoral Hessen*; *Hessen-Darmstadt*, and *Hessen-Homburg*.

*ELECTORAL HESSEN, OR HESSEN-CASSEL.**

The sovereign of this principality having been one of the Electors of the German Empire, still chooses to retain his title of *Churfürst* (Elector), a higher dignity than that of Grand-duke, or Landgrave; and his territory is called Electoral Hessen (*Chur-Hessen*), to distinguish it from the possessions of the other branches of the family. It is situate between Hanover and Bavaria, on the north and south; the Saxon duchies, and part of the Prussian territory, on the east; and Hessen-Darmstadt and Waldeck on the west. It is divided into four provinces, viz. —

Provinces.	*Popn.* 1840.	*Towns.*
Nieder-Hessen,..	353,220..	CASSEL, 26,000; Hofgeismar, 3000; Karlshafen, 1200; Spangenberg, 1700; Meltungen, 3000; Rothenburg, 3200; Eschwege, 4600; Allendorf, 3600; Homberg, 3200; Rinteln, 1700.
Ober-Hessen,....	119,008..	Marburg, 7000; Frankenberg, 3100; Ziegenhain, 1600; Treysa, 2005.
Fulda,.....	137,777..	Fulda, 9000; Hersfeld, 6000; Philipsthal, 700; Schmalkalden, 4000.
Hanau,.....	118,645..	Hanau, 13,000; Bockenheim, 1100; Nauheim, 1100: Gelnhausen, 2900.
	728,650	

CASSEL is a fine city, consisting of two towns, the old and the new, divided by the river Fulda,

* *Hessen* is the German, and *Hesse* the French form of the name.

across which there is a fine stone bridge. It possesses many fine buildings; a magnificent park, called the Augarten, a garden called Bellevue, and an esplanade. In the neighbourhood are:—*Wilhelmsthal*, a fine palace, and *Wilhelmshohe (Weissenstein)*, regarded as one of the finest and most magnificent residences in Europe. The other notable places of the province are:—*Hofgeismar*, a small town, with a castle of the Elcetor, and mineral waters; *Karlshafen*, a small town newly built, with a port on the Weser; and *Spangenberg*, with a strong castle on a hill, used as a state prison.

Marburg, 48 miles N. by E. of Frankfort, is the seat of a University, which possesses a valuable library, and a veterinary school. *Fulda*, an episcopal city on the river Fulda, has a fine cathedral. *Schmalkalden*, 60 miles S.E. of Cassel, a small town in the Thuringer-wald, with a saline, is noted in history for the League of Schmalkalden, made there by the Protestants in 1531. The whole valley of Schmalkalden is indeed but a vast workshop, where iron and steel are wrought into articles of every sort.

Hanau is a neat, busy, manufacturing and commercial town, situate on the Kinzig, not far from its confluence with the Meyn, 12 miles E. of Frankfort. It was here that the French army, on their retreat from the disastrous battle of Leipzig in October 1813, were waylaid and attacked by an Austro-Bavarian army, under Marshal Wrede, who, expecting an easy victory over the disheartened fugitives, paid for his presumption by a severe defeat, which cost him 12,000 men. *Bockenheim*, near Frankfort, is also an industrious place. *Gelnhausen*, 28 miles E.N.E. of Frankfort, situate upon a hill near the Kinzig, is only remarkable for the remains of a magnificent palace built by the Emperor Frederick Redbeard (Barbarossa) upon an island in the Kinzig.

GRAND-DUCHY OF HESSEN-DARMSTADT.

This State consists of three large territories, separated from each other by the Rhine and the Meyn, and of a smaller portion, between Hessen-Cassel and Waldeck. It is divided into two principalities, which are subdivided into 29 districts: and one province subdivided into 11 cantons. The Landgrave assumed the title of Grand-duke in 1814.

Divisions.	*Popn. in* 1840.	*Towns.*
Starkenburg,... (14 districts.)	300,160..	Darmstadt, 20,000; Bonshiem, 4000; Umstadt, 3100; Zwingenberg, 1500; Wimpfen, 2200; Erbach, 2000; Selingenstadt, 2600; Michelstadt, 2700; Offenbach, 8000.
Ober-Hessen,...	297,672..	Giessen, 7000; Alsfeld, 3000; Biedenkopf, 3300; Schlitz, 3000; Budingen, 2300; Friedberg, 2800.
Rhein-Hessen,..	213,671..	Mainz (Mayence, Mentz), 31,000; Worms, 8000; Bingen, 4100; Gunsterblum, 2400; Oppenheim, 2700; Alzey, 3600; Monshcim, 800; Nieder-Ingelheim, 1500.
	811,503	

Darmstadt, the capital and residence of the Grand-duke, is situate upon the Darm, 18 miles S. of Frankfort. It consists of two towns: the old town, a sombre place surrounded with an ancient wall, and the new town, well built, with wide and neat streets. Its principal buildings are:—the Grand-ducal palace, with fine gardens; the new spectacle-hall, a superb building; the palace of the hereditary prince; the hall of the States; the museum; artillery barracks, &c. *Offenbach*, on the Meyn, a few miles E. of Frankfort, is a flourishing commercial and manufacturing town. Its jewellery, linens, and varnished work, are exported to great distances. *Zwingenberg*, 11 miles S. of Darmstadt, is situate at the foot of the hill *Melibœus*, on the top of which is a tower and an inn, much frequented by visitors for the charming view.

Giessen, on the Lahn, 30 miles N. of Frankfort, is the seat of a university, a philological institute, a forest school, and an arsenal. *Friedberg*, about midway between Giessen and Frankfort, is a small town, formerly an imperial city, with an old castle overlooking the fertile plains of the Wetterau. It was restored by the Emperor Frederick I.; the Emperors of the house of Hohenstauffen often dwelt here; and Frederick II. embellished it, and endowed it with many privileges.

Mainz (Mayence, Mentz), formerly the capital of the territory of the Elector-archbishop, Primate and Arch-chancellor of the Empire of Germany, is a large and strongly fortified town, on the left bank of the Rhine, a little below its confluence with the Meyn. The immense fortifications with which it is inclosed, narrow winding streets, and ancient houses, give the town altogether a gloomy appearance. On the opposite side of the river is the small town of *Cassel* or *Castel*, comprised within the system of its fortifications, and connected with Mainz by a bridge of boats. Mainz is the principal fortress of the Confederation, and also the centre of a very active commerce. The population exceeds 31,000, besides the garrison, which is never less than 6000 men. The citizens have recently erected a statue of their townsman John Guttenburg, the inventor of printing. *Worms*, near the left bank of the Rhine, 27 miles S. of Mainz, is one of the most ancient cities of Germany, having been built by the Romans; it was frequently the residence of the Carlovingian kings, and the place of meeting of the Diets of the Empire; but is now only the shadow of what it was. Its dom-kirk or cathedral, a very imposing building, was commenced in the eighth century. At *Nieder-Ingelheim*, 8 miles W. of Mainz, are the remains of a magnificent palace, built by Charlemagne, and burnt by Frederick the Victorious, in his wars with the Bishop, Adolph of Nassau. The only other places worthy of notice in this province are:—*Bingen*, a small commercial town at the mouth of the Nahe, W. of Mainz; and *Gunsterblum*, where a canal has been dug through a neck of land to shorten the navigation of the Rhine, 16 miles S. of Mainz.

LANDGRAVIATE OF HESSEN HOMBURG.

This insignificant principality consists of two portions; the one surrounding the small town of Homburg, 10 miles N. by W. of Frankfort; and the other the lordship of Meissenheim, between the rivers Nahe and Glan, to the south-west of Bingen. *Homburg Vor der Hoehe*, a small town of 3000 inhabitants, on the Eschbach, is the residence of the Landgrave. It contains several remains of Roman antiquities. *Meissenheim* is a small town on the Glan, with 2000 inhabitants. In the neighbourhood are mines of iron and coal. The Landgrave is a cadet branch of the family of Hessen Darmstadt.

THE DUCHY OF NASSAU

Is situate in the angle formed by the Meyn and the Rhine on the south, and the Rhine on the west, between Hessen-Darmstadt and the Prussian duchy of the Lower Rhine. The greater part of the territory is mountainous, there being few plains, and none of these large. The southern portion, between the Lahn and the Rhine, is occupied by a mountainous region named the *Taunus*, which is said to contain 124 mineral springs; but of these only about 20 are of much repute. The principal are those of Ems, Wiesbaden, Geilnau, Faehingen, Selters, Soden, Kronenberg, Homburg, Schlangenbad, and Schwalbach. The principal towns are:—Wiesbaden, the capital, a pretty little town in a charming situation at the foot of Mount Taunus, two stages from Frankfort. It is a cele-

brated bathing place, and is much frequented in summer by strangers. There are a number of springs and baths, the principal of the latter is in a fine building called the Kur-saal, with a colonnade and green lawn before it; and there are many other elegant modern buildings.—Population, 7000.

Biberich, a fine town on the Rhine, with a superb castle, the ordinary residence of the Duke, with a large garden, containing a perfect imitation of the dwellings of the barons of the middle ages.—Population, including that of *Mosbach*, 3000; *Usingen*, 1700; *Idstein*, 1900; *Nieder Selters*, 900, noted for its mineral waters, of which a million and a half of bottles are annually exported. *Weilburg*, with 2000 inhabitants, a ducal castle, and a gymnasium. *Kronberg*, on the slope of Taunus, with mineral waters, a celebrated nursery, and 1700 inhabitants. *Heddernheim*, a small town of 1200 inhabitants, noted for antiquities, particularly a temple of Mithra, with an altar, a votive *alava* with an inscription, statues, and low-reliefs representing the mysteries of Mithra. *Weilbach*, with 600 inhabitants, and strong mineral waters. *Eltville*, a small town with 2000 inhabitants, in one of the finest situations in the *Rheingau*, a country celebrated throughout Germany for its exquisite scenery. *Rudesheim*, also in the Rheingau, with 2300 inhabitants. Near it, is the castle of the Count of Ingelheim, of which the square fort near the Rhine appears to be the work of the Romans, and to have served as the bridge head to the fort of Drusus, near Bingen. And not much farther is *Johannisberg*, celebrated for the rich vineyard and the fine castle belonging to Prince Metternich. *Limburg*, a small episcopal city on the Lahn, with 2900 inhabitants. *Dietz*, also on the Lahn, west of Limburg, with 2300 inhabitants, has a celebrated nursery, and the best organized bridewell in Europe. Near it is the village of *Fachingen*, noted for its mineral waters, of which half a million of bottles are annually exported; and in the neighbourhood is *Holzapfel*, a small town of 700 inhabitants, with an argentiferous lead-mine; and *Geilnau*, a small village with mineral waters. *Ems*, or *Bad-ems*, a small town on the Lahn, with 1400 inhabitants, and well frequented baths, an argentiferous lead-mine, and a grotto, like the Dog's at Naples. *Dillenburg*, a small town of 2400 inhabitants, with a pedagogium, and a tribunal of appeal. *Langenschwalbach*, with 1600 inhabitants, 14 mineral springs, and a fine bathing house. *Wilmar*, 1400, and *Westerburg*, 1400 inhabitants, with a coal-pit. *Nassau*, which gives its name to the duchy, to the ducal family, and to the family of Orange, now of Holland, is a small town on the Lahn, below Dietz.

THE PRINCIPALITY OF WALDECK

Consists of two separate parts:—Waldeck, N.W. of Cassel; and the small county of Pyrmont. *Corbach*, on the Itter, a small town with 2200 inhabitants, is the capital. *Arolsen*, upon the Aar, a small town of 1700 inhabitants, with a fine castle, is the residence of the Prince. *Niederwildungen*, a small town of 1700 inhabitants, has a lyceum and mineral waters. *Pyrmont*, a small town with 1100 inhabitants, 35 miles S.W. of Hanover, is noted for its baths and mineral waters, which attract great numbers of strangers. Near it is a grotto named *Dunsthohle*, which exhibits similar phenomena to those of the Dog's grotto at Naples. *Waldeck*, which gives its name to the state, is a small town on the Eder, with a castle, 6 miles E. of Corbach.

PRINCIPALITIES OF LIPPE.

These States are situate between Hanover and the Prussian province of Westphalia, on both sides of the river Weser. In *Lippe-Detmold* are:—*Detmold*, on the Werra, a small town of 2800 inhabitants, with a castle; *Lemgow* or *Lemgo*, a fine little busy town, with a gymnasium and 3800 inhabitants; *Lippstadt*, with 3200 inhabitants, possessed in common with Prussia; *Horn*, a small town of 1300 inhabitants, near which is the *Externstein*, a series of six immense isolated rocks, the highest of which has on its top a large artificial grotto, and another contains a chapel, also dug out of the rock. The road from Horn to Paderborn passes between the third and fourth, as if through an immense gateway. In *Lippe-Schauenburg* are:—*Buckeburg*, on the Ane, with a castle, a gymnasium, and 2100 inhabitants. *Stadthagen* with 1550 inhabitants, and a coal-pit.

POSSESSIONS OF THE SAXON PRINCES.

These lie all contiguous along the northern frontier of Bohemia and Bavaria; and include portions of the ancient Misnia, Lusatia, Thuringia, Vogtland, and Franconia. They form five sovereign States, the princes of which are all members of the same illustrious family, but are divided into two branches;—the elder, named the Ernestine branch, being the descendants of the elector Johann Friedrich, who was deposed for Lutheranism by the Emperor Charles V.; and the younger, or cadet branch, named the Albertine, being descended from Duke Maurice, who was invested with the electorate by the same emperor, in 1548, for his services against the Protestants. The head of the Albertine branch is now King of Saxony; the Ernestine family is subdivided into two minor branches; the heads of one of which are:—the Duke of Sachsen-Coburg-Gotha; the Duke of Sachsen-Meiningen-Hildburghausen-Saalfeld; and the Duke of Sachsen-Altenburg; and of the other the Grand-duke of Sachsen-Weimar-Eisenach. According to the ancient German custom, all the princes of both branches bear the same title of Duke of Saxony (*Herzog von Sachsen*, or in French *Duc de Saxe*); but are distinguished by the addition of the name of the territory which each family actually possesses. The States of the late Grand-duke of Saehsen-Gotha, who died in 1825, were divided, in terms of a convention dated 12th November 1826, among his collateral relatives, the princes of Coburg, Meiningen, and Hildburghausen; the last of whom ceded Hildburghausen to Meiningen, and now takes the addition of Altenburg, from the chief town of that portion of the Gotha territory which has fallen to his share.

The *KINGDOM of SAXONY* was till recently divided into five circles, which were irregularly subdivided into districts and bailliages. It was formerly much larger, but the king was stripped of great part of his dominions for his faithful adherence to the falling fortunes of Napoleon in 1813; and the dismembered territory was transferred to Prussia.

Circles.	*Towns.*
Meissen, (Misnia)	DRESDEN, 66,000; Pirna, 4400; Konigstein, 1300; Radberg, 1800; Meissen, 5000; Sehandau, 1000; Grossenhayn, 4500; Oschatz, 3800; Tharandt, 950; Hohenstein, 750.
Leipzig,	Leipzig, 41,000; Mitweyda, 5700; Dobeln, 5200; Grimma, 3800; Leissnitz, 3700; Colditz, 2700; Rochlitz, 3200; Waldheim, 2050; Wolkenburg.
Erzgebirge,	Freyberg, 12,000; Chemnitz, 23,000; Zschoppan, 5000; Annaberg, 4500; Schneeberg, 5800; Johann-Georgenstadt, 3800; Zwickau, 7400; Hahnichen, 4000; Kirchberg, 3600; Eibenstock, 3900; Geyer, 2600; Altenberg, 1500; Oberwiesenthal, 1500; Schonheide, 4000; Glauchau, 5300; Hohnstein, 3800; Waldenburg, 4500; Lossnitz, 4400.
Vogtland,	Plauen, 7000; Auerbach, 3000; Reichenbach, 3900; Oelsnitz, 3000; Neukirchen, 2000.
Lausitz, (Lusatia)	Bautzen (Budissin), 12,000; Ebersbach, 5500; Neu-Eybau, 5500; Gross-Sehonau, 4600; Zittau, 9000; Reichnau, 3200; Hernhutt, 1400; Kamenz, 4000.

It is now divided into four circles, viz. *Dresden*, population, 420,817; *Leipzig*, 367,753; *Zwickau*, 584,707; *Bautzen*, 262,913; army, 15,924;—total, 1,652,114.

The northern portion of the kingdom forms part of the great plain of Germany; but the southern portion rises into and includes the northern spurs and valleys of the Erzgebirge, which divide Saxony from Bohemia, and form that tract of wild and romantic country, called the *Sachsische Schweiz* (Saxon Switzerland). The climate is dry and temperate, though in the mountain districts, the winter is severe. The Saxons are very industrious; and are perhaps the most enterprising people in Germany. It is their great ambition to become a commercial people; and they are making gigantic efforts to accomplish their end. Nearly all the young men of talent and enterprise apply their energies to trade; railroads are springing up everywhere; and every encouragement is given to manufactures. Lutheranism is the prevalent religion; but religious principle is said to be everywhere at a very low ebb. Great attention, however, is paid to general education, which is conducted very nearly upon the same system as in Prussia, and is under the special charge of a minister of public instruction. Till 1830, the king exercised almost unlimited authority; his word was law, and the taxes were levied at his pleasure. The feudal system prevailed almost unimpaired; the landholders not only exacting numerous and burdensome services from their vassals and tenants, but being also the hereditary judges and magistrates of their own estates; and supporting the king's privileges, as the best means of preserving their own. But, in 1830, the revolutionary spirit, which had effected such important changes in France and Belgium, spread into Saxony; and the result was, that the king was stripped of all real influence; and the hereditary jurisdictions and feudal services abolished. Saxony has now a Parliament, divided into an upper and a lower house; and the king is so checked and hampered, that, beyond the nominal right of choosing his own ministers, and putting a veto upon enactments, he has scarcely any real power. The upper house, or Senate, consists of 52 members, some of whom have seats in right of their offices; some in right of their landed tenures; and some are elected for each parliament by a constituency of landholders, whose estates are of the yearly value of not less than 6000 dollars; their representatives possessing the same qualification. The lower house, or Chamber of Deputies, consists of 300 members, elected by the heads of families who contribute in any way to the public burdens; the representative possessing property to the amount of 1000 dollars a-year; and being paid 3 dollars a-day during his attendance. But, with all this form of liberal institutions, the system is still such a novelty, that, in practice, nothing is found easier than the management of both houses, by ministerial tact and influence. The cities and towns now elect their own magistrates, and manage their own affairs. The rest of the country is also divided into municipal districts, or townships, which likewise appoint and dismiss, when necessary, their own magistrates, without the intervention of the Crown. These municipalities are arranged in districts, each of which has a capital, where the magistrates hold periodical meetings, and try such cases as may be brought before them; but from their decisions, an appeal lies to the king's courts in Dresden. Saxony has thus assumed the form of a democratic state; though there has not yet been time for the full development of the democratic principle, and for its full effect upon the social character of the people.

DRESDEN, the capital, is delightfully situate upon the Elbe, at its confluence with the Weisseritz, in the middle of a large and rich plain, surrounded by an amphitheatre of low hills. Wide, straight, and well-kept streets, shady avenues, well-built houses, and a crowd of edifices remarkable for their architecture or their extent, render Dresden one of the first cities in Europe. The new Catholic church, which has a very high tower, is considered the finest building in the city, and one of the finest churches in Germany. Several large and fine buildings belong to the royal family; but the external appearance of the palace inhabited by the king does not correspond with its extent, or the richness of its apartments. The grand opera, attached to the palace, is also particularly remarkable for its extent, being capable of holding 6000 spectators. The city is divided into two parts, the Altstadt and the Neustadt (Old Town and New Town), by the Elbe, which is crossed by a magnificent stone bridge, 1420 French feet long, and 36 wide. Dresden possesses many establishments for education, among which may be mentioned the school of artillery and engineers, the school of medicine, the school of surgery, the veterinary school, and the academy of arts. The cabinet of medals is very rich; the royal picture gallery is considered one of the first in Europe; the botanic garden is well kept. There are three libraries, the largest of which contains more than 250,000 volumes, 4000 manuscripts, and 20,000 maps and charts. The citizens are noted for their industry, the principal articles of which are cloth, straw hats, wax candles, leather gloves, jewellery, musical instruments, muslins, laces, coaches, paper-hangings, which afford material for a very considerable trade. The fortifications have been demolished, and their site converted into public gardens and promenades. The king's ordinary residence is at *Pillnitz*, a fine palace with superb gardens, on the right bank of the Elbe, seven miles S.E. of Dresden; and, about the same distance N. by W. of Dresden, is the old palace of *Moritzburg*, once the favourite resort of the Saxon princes.

Pirna, on the left bank of the Elbe, 12 miles S.E. of Dresden, is a busy town, with an hospital for idiots and orphans, established in the late castle of *Sonnenstein*. In the neighbourhood are celebrated quarries, which employ 600 workmen. *Konigstein*, a small town on the left bank of the Elbe, still farther south, is noted for a fortress of the same name, built upon a rock 1400 feet high, the top of which is covered with meadows, woods, and cultivated fields. *Radberg*, 18 miles N.E. of Dresden, is the centre of the ribbon manufacture. *Meissen*, on the left bank of the Elbe, below Dresden, is a considerable town, with a fine gothic church, a convict college, an œnologic society, and several manufactures. The manufactory of porcelain, one of the best and most celebrated in Europe, employs sometimes 600 people, and produces an annual profit to the government of about £31,000 sterling. *Link*, on the banks of the Elbe, has a fine bathing establishment; and at the village of *Postchappel* there is a subterranean canal, lately dug to facilitate the transport of coal.

LEIPZIG (LEIPSIC), situate upon the rivers Elster, Pleisse, and Parde, 60 miles W.N.W. of Dresden, and 180 N.E. by E. of Frankfort, is a well-built town, with wide streets flanked with lofty and stately houses, in the midst of a charming country. It possesses a great number of scientific and literary establishments, the principal of which is the University, one of the most celebrated in the world, and the most flourishing in Germany, with a valuable library and other appendages. Leipzig is not only a very industrious town, and the most commercial in the kingdom, but may also be ranked among the most commercial towns in Europe. It is particularly noted for three great annual fairs, which are held at the New-year, St. Michaelmas, and Easter, each lasting fourteen days; and the goods bought and sold at these great meetings are valued at from £300,000 to £400,000 sterling, and the number of foreign merchants in the habit of attending is little short of a thousand. Nowhere, except in London and Paris, is the bookselling business more important than here; indeed it may be regarded as the first bookselling mart in the world. The town is surrounded with delightful gardens, among which are particularly distinguished that of Gerhard, formerly Reichenbach, and that of Reichel, with a great establishment of artificial mineral waters. It was in the neighbourhood of Leipzig, on the 16th, 17th, and 18th October 1813, that the great battle of the people (*Volkerschlacht*), was fought, which broke the power of Napoleon, and freed Germany from the yoke of France. To commemorate this event, an annual festival, called the "*Allen Deutschenfest*," (festival of all the Germans) is kept on the 18th October; and at *Probstheida*, a small village in the centre of the field of battle, a colossal cross has been erected.

Freyberg, 20 miles S.W. by W. of Dresden, is a large town upon the Mulde, noted for its silver mines, and for its mining academy, which possesses rich collections, and among others Werner's

museum, and a precious collection of models relative to the art of mining. It possesses, besides, an upper school of miners (Hauptberg Schule), and a gymnasium, with a seminary for schoolmasters. In the immediate neighbourhood are:—*Halsbruck*, a small town with an establishment called the Amalgamations-werk, where the precious metals are separated from the coarse matter in which they are contained; the *Kurprinzen canal*; *Himmelsfurst*, regarded as the richest silver mine in Saxony, employing 960 workmen; and *Bescheert-gluck*, another silver mine remarkable for its fine order. In 640 years the mines of Freyberg have produced 16,400,000 marks of silver. *Chemnitz*, 40 miles W. S. W. of Dresden, is the most industrious town in the kingdom; and most of its 23,000 inhabitants are employed in the manufacture of cotton, woollen, and silk stuffs. It is at the same time one of the best-built and most agreeable towns in Saxony, has six churches, a college, and an hospital. *Annaberg*, *Schneeberg*, and *Johann-Georgenstadt*, are three small towns among the hills, south of Chemnitz, noted for their manufacturing industry, and particularly for the great quantity of fine lace they produce. *Oberwiesenthal*, situate at the foot of the Fichtelberg, has so cold a climate, that its environs have been called the Saxon Siberia.

Plauen, the capital of the Vogtland, 70 miles S.W. by W. of Dresden, is a considerable town, with a gymnasium, a seminary for schoolmasters, and a great number of cotton manufactories. *Bautzen*, the capital of Lusatia, 32 miles E. of Dresden, is built upon a hill near the river Sprec, and is a considerable manufacturing and trading town. *Zittau*, upon the Altwasser or Mandau, is a large commercial town, the centre of the great linen manufactures of Saxony. The other principal manufacturing places in the circle are:—*Ebersbach*, *Neu-Eybau*, *Gross-Schonau*, *Reichnau*, and *Kamenz*, on the Black Elster, and *Hernhutt*, the cradle of the Hernhutters.

The Duchy of *SACHSEN-COBURG-GOTHA* consists of the two principalities of *Gotha* and *Coburg* in Thuringia, on the northern border of Bavaria. By the peace of Paris in 1814, the Duke had also assigned to him a territory with 80,000 inhabitants, to the west of the Rhine; but he has recently transferred the administration of that district to Prussia for an annual pension of 80,000 crowns. He was formerly designated Duke of Sachsen-Coburg-Saalfeld; but having ceded the latter territory to Meiningen, in 1826, he now takes the addition of *Gotha* instead of it.

The principal places in Gotha are:—*Gotha*, the capital, near the Leine, a neat trading town with 12,000 inhabitants. The ducal castle of Friedenstein, near the town, is noted for a terrace, compared to that of Windsor, and a museum formed of all the precious and literary collections of the late Grand-duke, and justly considered as one of the richest in Europe. "Nature and art," says Dr. Granville, "have made of this city as fair a capital in miniature as can well be imagined. The situation is beautiful, the climate unexceptionable, the air excellent, the scenery around it varied, pleasing, romantic, and interesting. Within, all the literary and scientific institutions which distinguish larger cities, are to be met with; all the amusements, and all the arrangements for convenience and comfort, and for cheapness of living, which are generally found only in cities of the first order." The Gotha Almanac, an annual publication of great celebrity, has been printed and published in this city since 1764. At no great distance is the observatory of *Seeberg*, to which the Barons Zach and Lindenau have given great celebrity; and farther, *Schnepfenthal*, noted for a house of education established by the learned Salzmann; a cabinet of natural history, a library, and a printing-press. *Waltershausen*, a small but industrious town, with 3000 inhabitants. *Buffleben*, a small village with a rich saline spring, discovered in 1828. *Ruhla*, a large village possessed in common with Weimar, and noted for ironmongery. *Ohrdruff*, a small town with 4500 inhabitants, a flourishing trade, a lyceum, and a castle of the Princes of Hohenlohe. *Zella*, or *Blazienzella*, with 1200 inhabitants, mostly employed in the manufacture of arms and ironmongery goods. At *Altenberg*, a small village with 230 inhabitants, is a monument called the Candlestick, erected in 1811 to mark the site of the church of St. John, built by Boniface, the apostle of Germany, in the year 724. *Korner*, 22 miles N. of Gotha, is the chief town of a small district disjoined from the rest of the principality.

In Coburg:—*Coburg*, upon the Itz, 40 miles S. of Gotha, is a neat trading town, with several manufactures, and about 8000 inhabitants. The Ehrenburg, the ducal castle, with a considerable library, the church of St. Maurice, and the arsenal, are the principal buildings.

The Duchy of *SACHSEN-MEININGEN-HILDBURGHAUSEN-SAALFELD* consists of a long irregular tract, between Gotha and Coburg, besides several separate patches. Its principal towns are:—*Meiningen*, on the Werra, a pretty little busy town, with 5000 inhabitants. The castle called Elizabethenburg is the Duke's ordinary residence; *Hildburghausen*, the seat of the superior authorities of the duchy, with a fine castle, a gymnasium, a seminary for schoolmasters, a foundling hospital, a school of arts, and 4000 inhabitants: *Dreissigacker*, a village with 300 inhabitants, noted for a school of forestry and rural economy; *Romhild*, with 1700 inhabitants; *Salzungen*, 2600, and a saline; *Liebenstein*, a village in a romantic situation, at the foot of the Thuringerwald, near Meiningen, with well frequented mineral waters; *Elsfeld* on the Werra, with 2600 inhabitants; *Saalfeld*, a town with 4000 inhabitants, and a mint; *Poesneck*, with 3200 inhabitants, with manufactories of cloth, leather, and porcelain; *Lehenstein*, a small town with 800 inhabitants, noted for its slate quarries; and *Sonnenberg*, a small town with 2400 inhabitants, noted for the manufacture of toys, which pass for the productions of Nuremberg.

The Duchy of *SACHSEN-ALTENBURG* adjoins the western border of the kingdom of Saxony, and is divided into two portions by Weimar and Reuss. The principal towns are:—*Altenburg*, on the Pleisse, a large town with 12,000 inhabitants; *Schmolln*, 2800; *Lucka*, 1300; *Ronneberg*, with 4000 inhabitants, and a fine establishment of mineral waters; *Eisenberg*, with 4200 inhabitants, a porcelain manufactory, and an observatory; *Roda*, 2700; and *Cahla*, or *Kahla*, on the left bank of the Saale, with 2200 inhabitants, a correction house, and a lunatic hospital established in the castle of Leuchtenberg on the opposite side of the river.

The Grand Duchy of *SACHSEN-WEIMAR-EISENACH* consists of six or seven separate parcels of territory, interspersed among the other Sachsen principalities; but arranged for administrative purposes into the three provinces of Weimar-Jena, Neustadt, and Eisenach. In Weimar-Jena are the following towns:—WEIMAR, the capital, situated upon the Ilm, in a delightful valley, a fine town with 12,000 inhabitants, noted for the residence of Goethe, the English park of the Grand-duke, one of the finest in Germany, and several scientific and literary establishments, among which is the Board of Industry, and Geographical Institute established in 1791, an establishment which has greatly contributed to the progress of geography by the learned analyses inserted in the Geographical Ephemerides, and by a great number of useful publications upon every branch of this science. In the neighbourhood of the city are:—*Belvedere*, a fine grand-ducal castle, noted for its orangery, and the exotic plants cultivated in its garden, which is one of the richest in Europe; *Tiefurth*, a small village with 225 inhabitants, noted for its agricultural establishment; *Berka*, a small town of 1100 inhabitants, with a castle, a forest-institute, well frequented sulphureous baths, and freestone quarries; *Osmanstadt*, a village of 450 inhabitants, with a garden containing the tomb of Wieland; and *Apolda*, a town with 3300 inhabitants, who manufacture an immense quantity of stockings. *Jena*, on the Saale, is a small town with 5000 inhabitants, and a celebrated University, to which are annexed a rich library, a

fine botanic garden, a veterinary school, theological, homiletic, and philological seminaries, and a rich cabinet of natural history. Jena is distinguished for the activity of its presses; and is the seat of the supreme tribunal of appeal, not only for Weimar, but also for the other Sachsen duchies and the principalities of Reuss; and of a grand-ducal mineralogical society. The situation of the town is beautiful, and particularly interesting to the geologist. *Ilmenau*, a small town with 2400 inhabitants, noted for the publication of books. It has also a porcelain manufactory and forges in its neighbourhood, and an argentiferous copper mine which is not worked. In the province of Neustadt are:—*Neustadt*, a small town with 3600 inhabitants; and *Weyda*, with 3200; both distinguished for their industry. In the province or principality of Eisenach, are:—*Eisenach*, on the Nesse, the largest town in the State, with a population of 9000, and the handsome castle of *Wartenburg*, which serves as the grand-ducal residence, and is noted in history as the place where Luther was concealed for ten months by his patron the Elector of Saxony; *Ruhla*, a large village with 3000 inhabitants, nearly equally divided between Gotha and Weimar; *Creutzburg*, with 1900 inhabitants, and a saline; *Ostheim vor der Rhon*, with 2600 inhabitants.

THE PRINCIPALITIES OF REUSS.

The house of Reuss is divided into two principal branches, the elder named the branch of-Greitz, and the younger that of Schleitz; the latter being subdivided into the two families of Reuss-Schleitz, and Reuss-Lobenstein-Ebersdorf. They possess a very small territory divided into two separate parts, in the Vogtland in Upper Saxony, immediately adjoining the south-western border of the kingdom of Saxony. So early as the twelfth century their ancestors were the *vogts* or bailiffs of that part of Saxony, which from that circumstance has acquired the name of Vogtland; and it is remarkable that since the eleventh century all the males of the family have borne the name of Heindrich, being distinguished by a regular series of numbers. The division of the family into the two existing branches took place in the year 1535, upon the death of Henry Reuss, lord of Plauen, who left three sons, two of whom were the ancestors of the present princes.

Towns.—*Gera*, not far from the White Elster, a neat industrious market-town with 9000 inhabitants. *Greitz*, upon the White Elster, a considerable trading town, with a fine castle, a gymnasium, a seminary for schoolmasters, and 7000 inhabitants. *Zeulenroda*, a manufacturing town, with 4300 inhabitants and a fine church. *Schleitz*, on the Wesenthal, a pretty town with 5000 inhabitants. *Hohenleuben*, a town with 2000 inhabitants, the seat of the Vogtland Antiquarian Society. *Ebersdorf*, a small town with 1100 inhabitants, of whom 400 are Hernhutiers. It has a castle with fine gardens, and a Hernhutter's college. *Lobenstein*, on the Lemnitz, a busy town with a castle and 3000 inhabitants.

Though the estates of the two branches of the house of Schleitz constitute two independent principalities, yet they form together only one member of the Confederation, and have only one vote in the *Plenum*.

PRINCIPALITIES OF SCHWARTZBURG-SONDERSHAUSEN AND SCHWARTZBURG-RUDOLSTADT.

The two princes of this house possess between them three distinct portions of territory, intermingled with the Saxon principalities, and the Prussian territory. Their principal towns are:—*Sondershausen*, a pretty little town at the confluence of the Beber and the Wipper, with a gymnasium, a cabinet of natural history, and 3600 inhabitants. *Arnstadt*, on the Gera, a busy town with 5000 inhabitants, and a church noted for its architecture. *Breitenbach*, noted for porcelain and musical instruments, with 2500 inhabitants. *Rudolstadt*, on the banks of the Saale, has 5000 inhabitants, a castle, a library, a picture gallery, a fine collection of plaster casts, a cabinet of natural history, a gymnasium, a seminary for schoolmasters, and other literary establishments, and manufactures. *Stadtilm*, 2000 inhabitants; and *Frankenhausen*, with 4000 inhabitants, a saline, and a coal-pit.

DUCHIES OF ANHALT.

The possessions of these princes consist of five separate portions on both sides of the Elbe, surrounded by the Prussian territory. They form three sovereign States, members of the Confederation; and are distinguished by the additions of DESSAU, BERNBURG, and KOETHEN or COETHEN.

Towns.—*Dessau*, a fine town with 10,000 inhabitants, on the Mulde, near its confluence with the Elbe. It contains a ducal castle, a college, a seminary for schoolmasters, a Jewish commercial school, &c. The environs are delightful, so much so that the country between Dessau and Woerlitz may be regarded as an English garden. *Woerlitz* is a small town on the Elbe, with 1800 inhabitants and a ducal castle. *Zerbst*, to the east of the Elbe, a considerable town with 8000 inhabitants, the seat of the tribunal of appeal for the three duchies of Anhalt and the two principalities of Schwartzburg. *Oranienbaum*, with a castle and 1800 inhabitants. *Bernburg*, near the Saale, a well-built town with a gymnasium and 500 inhabitants. *Coswig*, on the Elbe, with a castle and 2400 inhabitants. *Ballenstadt*, on the Getel, the ordinary residence of the duke of Anhalt-Bernburg, with 3600 inhabitants. *Harzgerode*, a small town with 2200 inhabitants, noted for its forges, mineral waters, and forest school. *Gernrode*, with 1800 inhabitants engaged in the manufacture of fire arms. *Koethen* or *Coethen*, upon the Ziethe, a fine town with 6000 inhabitants, and a castle, the residence of the Duke of Anhalt Coethen.

POSSESSIONS OF THE HOUSE OF BRUNSWICK.

This illustrious family is divided into two branches; that of the Dukes of Brunswick-Wolfenbuttel; and that of the Dukes of Brunswick-Luneburg. The head of the latter is now King of Hanover; while the elder branch possesses only a few scattered parcels of territory between Hanover and the Prussian provinces of Magdeburg and Brandenburg; which form six districts, viz. Braunschweig (Brunswick), Wofenbuttel, Helmstedt, Gandersheim, Holzminden, and Blankenburg, named from their chief towns. *Brunswick*, the capital of the duchy, is a well-built city, with 36,000 inhabitants, situate upon the Ocker. It possesses several scientific and literary establishments, among which are:—the Collegium Carolinum, which enjoys a great reputation; the Ducal Institute, in which have been united the two gymnasiums of Catherine and Martin; the college of anatomy and surgery; the seminary for schoolmasters; the cadet's school; the deaf-and-dumb institution, and the horticultural society; a rich public library, and a superb museum. *Wolfenbuttel*, a small city with 8000 inhabitants, is the seat of the tribunal of appeal for Brunswick, Lippe, and Waldeck, and possesses one of the richest libraries in Europe, contained in a fine building. *Helmstadt*, with 6300 inhabitants. *Schoningen*, with 3100 inhabitants, a saline and a coal-pit. *Bolzminden*, 3200 inhabitants. *Grunenplan*, 1000. *Blankenburg*, with a large castle, and 3200 inhabitants, employed in cutting marble, which is dug from the five quarries of *Heidelberg* in the neighbourhood. *Rubeland*, a village of 500 inhabitants, noted for its forges, and for the grottoes of *Baumann* and *Biels*, and quarries of excellent marble in the neighbourhood. The Duke of Brunswick also possesses the principality of *Oels* in Silesia, with 97,000 inhabitants, under the sovereignty of the King of Prussia.

The *KINGDOM OF HANOVER*, which belongs to the Duke of Brunswick-Luneburg, is a large territory in the north of Germany, bounded by Mecklenburg, and the Prussian provinces of Brandenburg and Saxony, on the east and south-east; by Hessen-Cassel, Lippe, and Westphalia, on the south and south-west; by Holland on the west; and by the North Sea and Denmark on the north. It is divided into six *landrosteien*, or governments, besides the Miningcaptainey (*Berghauptmannschaft*) of Klausthal.

Governments.	*Popn.* 1839.	*Towns.*
Hanover,	335,319..	Hanover, 28,000; Hameln, 5300; Salzhemmendorf, 800; Lockum, 1300; Nienburg, 3800.
Hildesheim,	363,353..	Hildesheim, 13,000; Gottingen, 11,000; Gosslar, 6000; Nordheim, 3500; Munden, 5300; Eimbeck, 5000; Osterode, 5000; Herzberg, 3100; Duderstadt, 4100.
Luneburg,	313,338..	Luneburg, 12,000; Harburg, 4000; Celle or Zell, 10,000; Bardowieck, 1300.
Stade,	251,588..	Stade, 5400; Bremervorde, 1600; Lilienthal, 480; Altenbruck, 2300; Verden, 4600.
Osnabruck,	266,678..	Osnabruck, 11,000; Meppen, 2200.
Aurich,	162,123..	Aurich, 3400; Embden, 11,000; Norden, 5400; Leer, 6000; Norderney, 600.
Klausthal,	29,708..	Klausthal or Clausthal, 8000; Cellerfeld, 4000; St. Andreasberg, 3900; Altenau, 1200; Grunz, 1000; Konigshutte.
	1,722,107	

HANOVER (*Hannover*), the capital of the kingdom, is situate in a sandy plain at the confluence of the Leine and the Ilre, and consists of four parts, named the Altstadt, Ægidien-Neustadt, Neustadt on the left of the river, and Gartenhausen; to which may be added the new suburb of Linden, composed of fine houses. There are several manufactures, and a considerable transit trade. In the immediate neighbourhood are the two royal residences of *Mont Brillant* and *Herrenhausen*, the latter of which has a fine botanic garden; and at *Kirchrode*, a village with 400 inhabitants, there is a royal menagerie. *Hameln*, on the Weser, was formerly of considerable importance for its fortifications, which are now demolished. At *Lockum* there is an evangelical convent and a theological school.

Hildesheim, upon the Innerste, a small, but industrious and commercial episcopal city, with one Catholic and one Lutheran gymnasium, a seminary for priests, and a library. *Gottingen*, 60 miles S. of Hanover, is a fine well built town at the foot of the Heimberg, upon the right bank of the New Leine, a canal drawn from the river of the same name. It is the seat of a celebrated University, which was founded by the Elector (King George II. of Great Britain) in 1734; and which possesses a most magnificent library of upwards of 400,000 volumes. There are besides a royal society of sciences, an observatory furnished with excellent instruments, a botanic garden, an academic museum, one of the richest deposits of natural history and curiosities, &c.—Population, 11,000. *Soder*, a small place, with a fine castle, belonging to the Count of Stolberg, and containing a fine picture gallery. *Gosslar*, at the foot of the Ramelsberg, one of the Hartz mountains, is noted for its mines of silver, lead, and copper, possessed in common by the King of Hanover and the Duke of Brunswick; for beer called *gose*, and quarries of stone and slates. *Nordheim*, 12 miles N. of Gottingen, is noted for sulphureous baths in its neighbourhood. *Munden*, at the confluence of the Fulda and the Werra, between Cassel and Gottingen, is one of the most commercial towns in the kingdom, and noted for stone-quarries. *Osterode*, at the foot of the Hartz, a busy town, containing a large magazine, where corn is kept to be sold to the miners at a low price in the time of dearth. *Herzberg*, a small town, with a manufacture of fire arms, which employs 1300 workmen. *Rothe-Hutte* contains the principal iron mine of the Hartz.

Klausthal, or *Clausthal*, a flourishing town, noted for its mines of lead and silver, which are considered the richest in the Hartz mountains. Their mean annual produce is about 24,000 marks of silver, and 48,000 quintals of lead and litharge. Mineralogists generally admire the magnificent hydraulic works of the Dorothea mine. Clausthal has a mint, a gymnasium, and a school of mines and forests. The Hartz mountains are chiefly composed of granite, and are more precipitous on the south side than on the north. They cover an area about 75 miles in length by 20 in breadth, where steep summits, deep vallies, woods, and marshes, form a natural labyrinth from which it is almost impossible for a stranger to extricate himself without a guide. These mountains have long been known on account of their mines. The silver veins are mostly within the territory of Hanover, embedded in the fissures of a greywacké rock, which also contains the remains of vegetables and marine animals. The other metals which are wrought are lead, iron, copper, zinc, and even gold; sulphur and arsenic are also obtained. Marble, slate, whetstones, and several kinds of argil, are found in different parts of the range; there are also many mineral springs, of which those of Limmer and Pyrmont are the most frequented. There are few places where the art of mining is so well understood. The workmen form a distinct race of people whose ancestors migrated from Franconia; and are arranged into companies, under the command of engineers of various ranks, corresponding to those of general, colonel, and lieutenant. *Cellerfeld*, a small town, which may almost be considered as a suburb of Clausthal, from which it is separated only by the Cellerbach, contains a collection of models. *St. Andreasberg*, and *Altenau*, are noted for their mines of silver and lead. *Grunz*, at the western extremity of the Hartz, is noted for the immense subterranean works excavated for the draining of the mines. *Konigshutte* possesses one of the largest forges in the kingdom.

Luneburg, upon the Ilmenau, in the midst of extensive heaths, is a flourishing town, with a considerable trade, a *Ritter's Academy* (college for nobles), a gymnasium, and one of the richest salines in Europe. Extensive quarries of limestone and salt pits are worked in the vicinity, and immense numbers of bees are reared in the district. The principal exports of the town are honey, wax, lime, and salt. The heaths of Luneburg form a sterile tract, covered with sand, fir-trees, heaths, and marshes, extending about 60 miles from east to west, and not much less from south to north, or from Celle to Harburg. *Harburg*, situate on the right bank of the Elbe, opposite Hamburg, to which it has a ferry. *Celle*, near the Aller, a large town, is the seat of the supreme court of justice of the kingdom, and has a large bridewell and gymnasium, a lying-in-hospital, a society of rural economy, and a stud. *Bardowieck*, on the Ilmenau is only remarkable for a large and fine gothic church.

Stade, on the Schwinge, is a small fortified town, with a gymnasium, and a seminary for schoolmasters. *Bremervorde*, 16 miles S.W. of Stade, on the Oste, has shipbuilding-yards, and in the neighbourhood turf bogs. *Lilienthal*, near Bremen, is noted for an observatory where Dr. Harding in 1804 discovered the planet Juno. *Altenbruck*, whose inhabitants are chiefly employed in commerce or navigation, is the principal place in the interesting country of Hadeln. In its neighbourhood are the *Uhlemull* waters, similar to those of Pyrmont.

Osnabruck, upon the Hase, 75 miles W. of Hanover, is noted for its linen, has two gymnasiums, a seminary for schoolmasters, and an institute for midwives. It was formerly the capital of a sovereign bishopric, which was secularized after the Reformation. *Rothenfeld*, a village with a rich saltpit. *Meppen*, on the right bank of the Ems, at the mouth of the Hase, has a Catholic gymnasium and sulphureous baths.

Aurich, upon a navigable canal which extends from Embden, is a small town with a lyceum, and is noted for its horse-markets. *Embden*, on the east shore of the Dollart gulf, near the mouth of the Ems, is a large seaport town with a good road. It has numerous manufactures, a gymnasium, a

school of navigation, one for midwives, and a natural history society; and may be considered the first commercial town of the kingdom. *Norden*, also a commercial town, 16 miles N. of Emhden, has a port and shiphuilding yards. *Leer*, on the Ems and Ledd, is a large trading town with shipbuilding yards. *Papenburg*, a small town 20 miles S. of Embden, is situate in the midst of marshy lands, which supply great quantities of peat. It communicates with the Ems by a navigable canal: it has also shiphuilding yards; its inhabitants are largely engaged in trade and navigation, and their ships are to be met with in all the ports of the North Sea and the Baltic. *Norderney*, a small town with 600 inhabitants in the island of that name, is much frequented for sea-bathing.

THE GRAND-DUCHY OF OLDENBURG.

The principal part of this State is situate to the west of the Weser, and is surrounded by the territory of Hanover on all sides but the north, where it borders upon the North Sea. It is generally a low country, but some heights which extend along the coasts protect it against the encroachments of the sea. The land on the banks of the rivers is rich and fruitful, but the rest of the country is sandy and unproductive. The Duke also possesses the Principality of Lubeck, consisting of several parcels of land in Holstein to the northward of Lubeck, and the Principality of Birkenfeld to the westward of the Rhine, adjoining the Coburg and Homburg allotments.

In Oldenburg the principal places are:—*Oldenburg*, upon the Hunte, with about 8000 inhabitants, is the capital of the State. It contains a ducal castle, a fine park, a building for the government offices and records, barracks, a public library, a military school, a gymnasium, a seminary for schoolmasters, and a precious collection of German antiquities, particularly of objects of art found in the country, several manufactures, and a considerable trade. *Elsfleth*, a small town on the left bank of the Weser, has building slips, and 1500 inhabitants. *Brake*, a small town of 1200 inhabitants, with a bridge on the Weser, where the large ships that cannot go up to Bremen stop. *Wildeshausen*, has a deaf-and-dumb institution, and 2000 inhabitants. *Wechta*, with 1800 inhabitants, the hridewell for the whole duchy, and a Catholic gymnasium. *Jever*, near the sea, with 3500 inhabitants. *Hooksiel*, a village with two building slips, and 500 inhabitants mostly engaged in navigation and commerce. *Delmenhorst*, 5 miles W. of Bremen, has a population of 2000, and is noted for a fair, where a great many horses and oxen are sold. *Saterland*, situate in the midst of a marshy tract, whose inhabitants, originally Friesianders, have retained the manners and customs of their ancestors. *Varel*, at the mouth of the Jahde, is a place of considerable trade, with a tide harhour.

In Lubeck:—*Eutin*, upon a lake of the same name abounding with fish, has 2700 inhabitants, and a castle formerly the residence of the prince-bishops of Lubeck.

In Birkenfeld:—*Birkenfeld*, a small town on the Nahe, 52 miles W.S.W. of Mainz, has a Latin school, a seminary for schoolmasters, and about 1700 inhabitants. *Oberstein*, also on the Nahe, has 1500 inhahitants, who manufacture and export a great quantity of jewels, and precious stones, such as agates, chalcedony, carnelians, jaspers, and lapis lazuli, made into ear-rings, snuff-hoxes, seals, bracelets, and necklaces.

The *LORDSHIP of KNIPHAUSEN*, is a very small territory in the northern part of Oldenburg, and forms one of the sovereign States of the Confederation, but without a vote in the Diet, its contingent being joined with that of Oldenburg. It belongs to the Dutch family of Bentinck, who have large possessions in Holland. *Kniphausen*, a castle with about 50 inhabitants, is the capital of the State, but the prince usually resides at Varel.

POSSESSIONS OF THE MECKLENBURG PRINCES.

This family, one of the most ancient in Europe, has been divided into two branches since the middle of the seventeenth century. The heads of both take the title of Grand-duke of Mecklenburg, with the addition, to the one of Schwerin, and to the other of Strelitz. Their possessions are bounded on the south hy Hanover and Brandenburg; on the east by Pomerania; on the west hy Lubeck and Lauenburg; and on the north by the Baltic Sea. The country consists of a large sandy plain interspersed with forests and lakes, the latter of which are numerous, particularly in the neighbourhood of Strelitz. Near the centre are some hills which scarcely exceed the elevation of 500 feet. Nearly six-sevenths of the territory belong to Schwerin; and only one-seventh to Strelitz. The principal towns are:—

In Schwerin:—*Schwerin*, the capital, a fine, well-built, busy town, near the lake of the same name, 60 miles E. of Hamburg, with a population of 13,000. The Grand-duke's castle is a large building upon an island in the lake, and is connected hy bridges with the town and its fine gardens. *Ludwigsburg*, or *Ludwigslust*, a pretty town with 4000 inhahitants, situate in a sandy country, 20 miles S. of Schwerin, upon a canal drawn from the Recknitz, between that river and the Elde, and emhellished hy fine alleys, is the ordinary place of residence of the Grand-duke. This castle or palace, is particularly remarkable for the beauty and extent of its gardens, and contains a fine gallery of paintings. *Rostock*, on the Warnow, 45 miles N.E. of Schwerin, and 6 from the sea, is the largest and most populous town in the State. It contains about 19,000 inhabitants, who enjoy great privileges, and are governed hy laws peculiar to themselves. It has a University with a pedagogic-theological seminary, a cabinet of medals, a museum, and a rich library. Its port is at *Warnemunde*, at the mouth of the Warnow. *Parchim*, with 5100 inhahitants, 20 miles S.E. of Schwerin, is the seat of the supreme trihunal of appeal for both duchies. *Waren*, on the lake Muritz, with 4400 inhahitants. *Grabow*, 3400. *Dobberan*, 6 miles W. of Rostock, a small town, with 2200 inhahitants, a grand-ducal castle, a theatre, well frequented haths, and noted for horse races. Opposite to this place is a mass of low flat stones of different sizes and colours, which serve as a barrier against the sea. They are called the *Heilige Damm*, or holy dike, and occupy an area of more than 2 miles in length and 15 yards in breadth, and from 12 to 16 feet high. This dike is considered to he one of the most ancient religious monuments of the northern tribes. All the stones are polished and joined without cement, and various figures may he traced on them. *Gustrow*, a flourishing town, with a gymnasium, and 8400 inhahitants. *Wismar*, a large seaport town, with 10,000 inhahitants, at the southern extremity of a gulf of the Baltic, which is shut in hy the island of Poel. *Sulze*, with 2200 inhahitants, and a saltpit. *Boitzenburg*, a trading town, with 3100 inhahitants. *Malchin*, with a fine church, and 3600 inhahitants. *Butzow*, 3600.

In Strelitz:—*Neu-Strelitz*, upon the lakes Zirk and Glanbeck, built in the form of a star with eight rays, or streets, terminating at a common centre. The grand-ducal palace has fine gardens, a valuahle library, and a fine collection of Slavonic antiquities.—Population about 6000. *Alt-Strelitz*, 3 miles to the southward, has a population of 3500. *Neu-Brandenburg* is a fine busy town, with 6000 inhahitants, and a summer palace of the Grand-duke. *Friedland*, celehrated for its tobacco: population, 4000. *Ratzeburg*, at the western extremity of Mecklenburg, belongs partly to Strelitz and partly to Denmark.—See Denmark.

THE PRINCIPALITY OF LICHTENSTEIN.

Is a very small territory lying along the right bank of the Rhinc, above the Boden-See. It consists of the two lordships of Vadutz and Shellenberg; the only town is *Vadutz*, now called *Lichtenstein*, with about 1000 inhahitants. The Prince's residence is at Vienna, or at his castle of Troppau in Silesia.

THE FREE CITIES.

LUBECK, an ancient city built upon a hill, at the confluence of the rivers Wakenitz and Trave, has a population of about 20,000. It is very much fallen from its ancient importance, when it was one of the principal Hanse towns, but still possesses a considerable transit trade, and is the seat of the supreme tribunal of appeal for the four free cities. It possesses a territory of about 100 square miles; and *Travemund*, at the mouth of the Trave, on the Baltic, is its shipping port. Travemund has a fine sea-bathing establishment, and about 1200 inhabitants. Regular steamboat communication is now established between it and Kronstadt, or St. Petersburg.

FRANKFORT, the federal capital, is a fine old town on the right bank of the Meyn, about 20 miles E. of its confluence with the Rhine. The fortifications have been entirely demolished, and their site converted into fine promenades; and the interior of the town has recently been greatly improved by the opening of wide thoroughfares through the ancient clusters of narrow streets and lanes. The suburbs are adorned with elegant villas; and the Meyn is lined with capacious open quays, which in some places are as highly ornamented with elegant mansions as those of the Seine at Paris. Frankfort enjoys a considerable trade; its two annual fairs are still well frequented; and it has long formed a favourite centre of the commercial and banking transactions of Germany. In the house of one of its merchants, Mr. Bethman (now deceased), there is a piece of sculpture of exquisite beauty, which is visited by all travellers. It consists of a figure of Ariadne sitting on a tigress, the size of life, and cut out of a single block of marble by Danneeker of Stuttgardt. Frankfort likewise possesses a fine museum of natural history, particularly rich in ornithology, and recently raised to the first rank by the collections brought from Africa and Asia by the traveller Ruppel, a native of this city. The town-house contains the hall in which the Emperors used to be elected by the delegates of the Electors; and the original of the famous charter called the Golden Bull, granted by Charles IV. in 1356, to regulate the mode of electing the Emperor, and the rights and duties of the princes and States of the empire. The Emperors, after their election, used to make their public entry into Frankfort, and were crowned in the Dom-kirk or cathedral, which still exists. — Population, about 40,000, including 5000 Jews. A fine old stone bridge, 950 feet long, with fifteen arches, connects Frankfort with *Sachsenhausen*, one of its suburbs, on the south side of the river. The executive government of the city is vested in a senate or town-council of 42 members, from whom are chosen, every two years, two burgomasters. The Legislative Assembly is composed of 85 citizens elected annually; and a permanent commission of 60 members superintends the finances of the State. All the Christian citizens enjoy equal rights, and may be elected to public offices; but the Jews, though they enjoy the right of burgess-ship, have no vote in the elections, and are not admissible to public offices. The city is copiously supplied with fine water, which has been recently brought from the northern hills, through a subterranean aqueduct.

BREMEN, the ancient capital of the Hanseatic league, is situate at the confluence of the Wumme with the Weser, about 50 miles from the North Sea. It consists of an old town, and a new town, on the opposite sides of the Weser; the former is gloomy and ill built; but the latter contains regular streets and modern houses. The Dom-kirk, or cathedral, is reserved for the Lutherans; and the Calvinists, who form more than two-thirds of the population, have four parish churches. The government of the State is vested in a supreme council, the members of which are all Calvinists; the Lutherans being excluded not only from the council, but also from civil employments. This council governs the State, regulates commercial affairs, and even dispenses justice; but matters of great importance are referred to a council of elders and of the principal citizens, who thus form a sort of legislative assembly. Bremen has manufactures of linen, cloth, hats, worsted stockings, tobacco, oil, and glass. It is also noted for its beer, and sugar refineries; but its wealth and importance depend more upon commerce than manufactures; and next to Hamburg, it is the greatest entrepôt of the German trade. In the small territory belonging to it, there are the burgh of *Vegesack*, which forms the harbour of Bremen, and 35 villages; but large vessels stop at Braacke, about half way down the Weser. The population of the town is about 41,000; of the State, 58,000. The citizens have recently purchased from the King of Hanover a piece of ground about three miles in circuit, 38 miles below Bremen, on which they have constructed *Bremenhafen*, already a solidly built and flourishing town. The Weser is there so deep, that the largest vessels can reach this new port.

HAMBURG, the greatest commercial city of Germany, is situate on the right bank of the Elbe, 70 miles from the North Sea. Narrow and dirty streets, irregularly built and old fashioned houses, give a gloomy appearance to the greater part of the old town; but the new town, and particularly the terraces along the Binnen Alster, a large basin formed in the heart of the city by that small river, the Jungfernsteig (Young Ladies' Walk), the Damm-thor quay, and other places, present a very different aspect. The fortifications have been demolished, and converted into public walks. None of the public buildings are in anyway remarkable; the stadthouse is a large and heavy structure; the bank, the exchange (Borsenhall), the admiralty, the house of industry, are well suited for their respective purposes, but exhibit nothing striking in their architecture. There are 16 Lutheran churches, 2 Calvinistic, and 1 Catholic, besides English chapels and meeting-houses for other sects. The finest church is St. Michael's, which has a tower 450 feet high. The river opposite the city is divided into several channels, with intervening islands, occupying altogether a space of seven miles in width, across which the French compelled the citizens to erect a wooden bridge; but since the restoration of their independence, the bridge has been demolished, and the materials sold; and the communication with Harburg, on the opposite bank of the river, is now maintained by means of steam-boats, barques, and other craft, which pass to and fro almost hourly. The government is vested in a senate, consisting of thirty-six members, four of whom are burgomasters, four syndics, one prothonotary, one keeper of the records, and two secretaries, all chosen by the citizens, who are formed for this purpose into five divisions or classes. The administration of the civil and criminal law is confided to three graduated courts, with a power of appeal from the lower to the higher. The police is well regulated, and order preserved by a city guard of 400 men; besides whom the State maintains a regular army of 1850 men, and has an organized corps of city militia. The revenue is derived from personal imposts on the citizens, tolls on foreign ships, and slight duties on imported articles, amounting altogether to a million and a half of florins, or £150,000 sterling. The greater part of the trade of Hamburg is carried on by foreign vessels, from almost every maritime country; and from its situation at the mouth of a river navigable for 500 miles into the interior of the country, the city enjoys a prodigious inland trade, and is necessarily the entrepôt for a great part of the East Prussian, Saxon, and other adjoining States. The manufacturing industry of the citizens is likewise very considerable; the principal branches consisting of sugar-refining, spinning-mills, hat-making, linen, silk and velvet weaving, calico-printing, snuff and tobacco, whalebone-cutting, in making gold and silver articles, and various other things. The schools are well conducted; a gymnasium, or high school, a kind of college, has five professors; and the Johaneum, an establishment of the same kind, has one director, and seventeen tutors. The institutions for the relief of poverty, sickness, and old age, are benevolently and economically supported. There are both French and German theatres, and ample means provided for the enjoyment of music and daneing. The total number of inhabitants within the city amounted in 1832 to 122,000, having more than doubled since the expulsion of the French in 1814. The inhabitants are divided into two classes of burgesses; the one class, the hereditary or active burghers, enjoy cer-

tain rights and privileges, while the others are restricted to certain prescribed branches of industry, and are subject to the payment of a tax. Strangers pay higher duties than burghers, and cannot possess real property in their own names. Jews are allowed to possess houses in certain quarters of the city, but enjoy none of the rights of burghership. The government is aristocratic; the council was formerly exclusively Calvinistic, but since 1814 the right of burghership has been conceded to the Lutherans. Hamburg owes its liberty to the mutual jealousy of its neighbours, the Kings of Denmark and Prussia, neither of whom will consent to the other getting possession of so rich a prize, though they both covet it. But to show his *good-will*, the King of Denmark keeps the roads that lead to it through his territory in the worst possible state.

Within the territory of Hamburg are several places worthy of notice. *Hamburgerberg* is remarkable for its delightful situation, fine houses, and the amusements of every kind which it offers for the recreation of the citizens. It may indeed be considered as one of the finest suburbs of Hamburg. *Bergedorf*, a small town, with 2200 inhabitants, 10 miles S.E. of the city. *Ritzebuttel*, a town with 1600 inhabitants; and *Cuxhaven*, with 800, are situated in a small territory belonging to Hamburg, on the sea-coast, outside of the mouth of the Elbe. The latter is noted for sea-bathing, its lighthouse, and its harbour, from which steam-ships and packets sail regularly to Harwich, Amsterdam, and London. Near Cuxhaven is the small sterile island of *Neuwerk*, with a lighthouse. The islands in the river opposite the city are called the *Vierlander*, and are said to rival the Egyptian Delta in fertility. Their inhabitants are very primitive in their habits and manners; marry only among themselves; and regard strangers with jealousy; but are said to be very wealthy, finding in the city a good and ready market for all their produce.

THE GERMAN EMPIRE.

Prior to the dissolution of the empire in 1806, Germany was parcelled out among nearly 300 sovereign princes, or principalities, including in that number 50 free imperial cities; and these were for certain purposes arranged into NINE CIRCLES: viz. *Swabia*, *Bavaria*, *Austria*, in the south, extending from Switzerland and the Rhine to the borders of Hungary; *Franconia*, in the centre; the *Upper Rhine*, and the *Lower Rhine*, consisting of upwards of 25 separate parcels of territory, lying along both sides of that river, and extending eastward beyond the Weser; *Westphalia*, *Lower Saxony*, and *Upper Saxony*, in the north, between France and Holland and the Baltic, including the lower part of the basin of the Rhine, and the greater portion of the lowland of Germany. Besides these, *Bohemia*, *Moravia*, and *Silesia*, were included within the limits of the empire; but as they belonged exclusively to the Emperor himself, they were not included in any of the administrative circles, which were established for the benefit and regulation of the minor princes. The electors, or princes who had the privilege of electing the Kaiser, or feudal chief of the empire, were:—the three Archbishops of Mainz or Mentz, Treves, and Cologne; the King of Bohemia; the Duke of Bavaria; the Palsgrave, or Count Palatine of the Rhine; the Duke of Saxony; the Margrave of Brandenburg; the Duke of Brunswick-Luneburg, or Hanover; and the Landgrave of Hessen-Cassel. The electoral and princely dignity of the archbishops has been abolished. The King of Bohemia now takes the title of Emperor of Austria (Kaiser von Oesterreich); the Electorate of Bavaria became extinct in 1777, but after some dispute, the last Elector's distant collateral relative, the Elector, Palsgrave of the Rhine, was allowed, in 1779, to take possession of his States; and both families are now represented by the King of Bavaria, the descendant of the Palsgraves. The Elector, Duke of Saxony, is now King of Saxony; the Margrave of Brandenburg is King of Prussia; the Duke of Brunswick-Luneburg is King of Hanover; and the Landgrave of Hessen-Cassel remains Landgrave still, but retains the higher title of Elector, though the privileges attached to that dignity no longer exist.

MEDIATIZED PRINCES.—The other Sovereign States were nearly all swept away by the wars of the French Revolution: some of them were entirely abolished; the ecclesiastical principalities were secularized; and all the imperial free towns, except four, were annexed to the dominions of neighbouring princes. The secular princes of the Empire, excepting the few who have been allowed to retain their sovereignty, have been *mediatized*, that is, deprived of their sovereignty, and subjected to other princes; and of these some possess larger estates than their more fortunate brethren. The following Table contains a list of these mediatized princes, and of their estates, with the States to which they have been annexed; and also of the other princely houses and counts *(fürsten* and *graffen)*, who, though they possess no territory properly called mediate, still enjoy, in their quality of ancient States of the Empire, certain rights and titles, which the federal act of 1815, and subsequent enactments have assigned to this privileged class. The *fürsts* (princes) named in this list have the title of *Durchlaucht (Most Illustrious,* equivalent to *Serene Highness);* and the *grafs* (counts), that of *Erlaucht (Illustrious.)*

NAMES.	*Titles.*	*Area in square geog. miles.*	*Population.*	*Revenue in Pounds Sterling.*	*States to which they are subject.*
Aremberg,	Duke	218	79,171	£75,000	Prussia, Hanover.
Auersberg,	Prince	..	....	....	Domiciled in Austria.
Austria-Schaumburg,	Arch-d.	29	3,581	3,000	Nassau.
Bentheim-Meeklemberg, or Rheda,	Prince	51	10,493	6,000	Prussia.
Bentheim-Bentheim, or Steinfurt,	Prince	318	26,109	16,000	Hanover, Prussia.
Bentink,	Count	54	8,129	15,000	Oldenburg.
Castell, two branches,	Count	86	9,449	6,000	Bavaria.
Colloredo-Mansfeld,	Prince	14	1,894	20,000	Wirtemberg.
Croy,	Duke	88	9,533	15,050	Prussia.
Dietrichstein,	Count	19	2,235	25,000	Wirtemberg.
Erbach-Erbach,	Count	91	15,614	11,000	Hessen, Wirtemberg.
Erbach-Furstenau,	Count	61	10,715	7,500	Hessen.
Erbach-Schonberg,	Count	51	11,914	7,500	Hessen.
Esterhazy,	Prince	3	830	180,000	Bavaria.
Fugger-Babenhausen,	Prince	112	11,005	10,000	Bavaria.
Fugger-Glott,	Count	21	3,912	4,000	Bavaria.
Fugger-Kirehberg,	Count	67	11,980	6,000	Bavaria, Wirtemberg.
Fugger-Kirehheim,	Count	24	2,334	3,500	Bavaria.
Fugger-Nordendorf,	Count	2	600	1,500	Bavaria.
Furstenberg,	Prince	600	85,071	60,000	Bad., Wirt., Hohenzollern

NAMES.	Titles.	Area in square geog. miles.	Population.	Revenue in Pounds Sterling.	States to which they are subject.
Giech,	Count	64	12,000	£8,000	Bavaria.
Gorz, named Schlitz,	Count	42	6,898	6,000	Hessen.
Harrach,	Count	..	....	....	
Hohenlohe-Langenburg-Kirchberg,	Prince	78	16,500	7,000	Wirtemberg.
Hohenlohe-Langenburg-Langenburg,	Prince	85	17,500	9,000	
Hohenlohe-Ingelfingen, or Oehringen,	Prince	83	20,000	11,500	
Hohenlohe-Waldenburg-Bartenstein,	Prince	112	23,000	10,000	
Hohenlohe-Waldenburg-Jaxtberg,	Prince	88	10,800	8,000	
Hohenlohe-Waldenburg-Schillingsfurst,	Prince	80	17,698	10,000	
Isenburg-Birstein,	Prince	120	25,957	10,000	Hessen.
Isenburg-Budingen,	Count	50	10,960	6,000	
Isenburg-Meerholz,	Count	34	6,998	4,500	
Isenburg-Philippeick,	Count	..	....	....	
Isenburg-Wachtersbach,	Count	27	5,530	5,000	
Kaunitz-Rietberg,	Prince	..	....	....	Domiciled in Austria.
Khevenhuller,	Prince	..	....	....	Do.
Konigsegg-Aulendorf,	Count	46	4,828	10,000	Wirtemberg.
Kufstein,	Count	..	....	....	Domiciled in Austria.
Leiningen,	Prince	397	87,010	56,800	Baden, Bavaria.
Leiningen-Billigheim,	Count	10	1,963	1,500	Baden.
Leiningen-Neidenau,	Count	10	1,860	1,500	Baden.
Leiningen-Westerburg (Old),	Count	34	4,751	2,500	Nassau-Darmstadt
Leiningen-Westerburg (New),	Count	..	....	....	Nassau.
Leven,	Prince	40	5000	10,000	Baden.
Lobkowitz,	Prince	..	....	....	Domiciled in Austria
Lowenstein-Wertheim-Freodenberg,	Prince	133	21,708	17,000	Bav., Wirtemberg, Baden.
Lowenstein-Wertheim-Rosenberg,	Prince	160	28,352	40,000	Bav., Wirtemberg, Baden.
Looz-Corswaren,	Duke	240	20,967	17,500	Prussia.
Metternich-Winneburg,	Prince	..	....	....	Domiciled in Austria.
Neipperg,	Count	27	3,175	4,500	Wirtemberg.
Oettingen-Oettingen,	Prince	59	14,933	11,500	Bavaria, Wirtemberg.
Oettingen-Wallenstein,	Prince	187	41,954	35,000	Bavaria, Wirtemberg.
Ortenburg,	Count	19	2,300	2,500	Bavaria.
Pappenheim,	Count	56	7,167	5,000	Bavaria.
Platen-Hallermund,	Count	..	....	....	Domiciled in Austria.
Plettenberg-Mietingen,	Count	8	1,250	8,600	Wirtemberg.
Pucklcr-Limpurg,	Count	56	5,255	4,000	
Quadt-Isny,	Count	6	2,000	7,000	Wirtemberg.
Rechberg,	Count	35	38,164	8,500	Wirtemberg.
Rechstein-Limpurg,	Count	48	6,695	1,500	Bavaria.
Rosenberg,	Prince	..	....	....	Domiciled in Austria.
Salm-Horstmar,	Prince	496	45,779	20,000	Prussia.
Salm-Kirburg,	Prince	144	18,442	19,000	Prussia.
Salm-Reifferscheid-Krautheim,	Prince	66	15,005	8,000	Wirtemberg, Baden.
Salm-Reifferscheid-Ray,	Prince	..	....	....	Domiciled in Austria.
Salm-Salm,	Prince	320	8,875	40,000	Prussia.
Schasberg-Thannheim,	Count	19	1,200	5,000	Wirtemberg.
Schonborn-Buchheim,	Count	..	....	....	Domiciled in Austria.
Schonborn-Wiesentheid,	Count	70	10,330	25,000	Bavaria, Hessen.
Schonburg-Rochsburg,	Count	30	6,500	2,000	Saxony.
Schonburg-Hartenstein,	Prince	..	....	....	Domiciled in Aust. & Sax.
Schonburg-Waldenburg,	Prince	88	42,500	15,000	Saxony.
Schonburg-Penigk,	Count	61	15,000	4,000	Saxony.
Schwarzenburg,	Prince	48	20,000	4,500	Bavaria.
Solms-Braunsfels,	Prince	149	27,743	11,000	Prussia, Wirt., Hessen.
Solms-Lich, and Hohen-Solms,	Prince	64	9,033	3,500	Prussia, Hessen.
Solms-Laubach,	Count	34	5,490	3,000	Hessen.
Solms-Rodelheim,	Count	40	5,681	3,000	Hessen.
Solms-Wildenfels,	Count	..	....	....	Hessen.
Stadion-Thannhausen,	Count	19	2,060	3,000	Bavaria.
Stadion-Warthausen,	Count	11	1,478	9,000	Wirtemberg.
Stahrenberg,	Prince	..	....	....	Domiciled in Austria.
Sternberg-Manderscheid,	Count	42	3,497	5,000	Wirtemberg.
Stollberg-Rossla,	Count	85	10,990	7,500	Prussia, Hessen.
Stollberg-Stollberg,	Count	67	5,205	5,000	Prussia, Hanover.
Stollberg-Wernigerodc,	Count	98	16,736	32,500	Prussia, Hanover, Hessen.
Thurn and Taxis, or Tour and Taxis,	Prince	206	30,746	50,000	Bav., Wirt., Hohenzollern
Tocring-Guttenzell,	Count	19	1,938	3,000	Wirtemberg.
Trautmansdorf,	Prince	..	....	....	Demiciled in Austria.
Waldbott-Bassenheim,	Count	5	620	4,000	Wirtemberg.
Waldbott-Wolfegg-Waldsee,	Prince	96	15,000	7,000	Wirtemberg.
Waldburg-Zeil-Trauchburg,	Prince	72	9,700	4,000	Wirtemberg.
Waldburg-Zeil-Wurzach,	Prince	48	6,900	3,000	Wirtemberg.
Waldeck-Pyrmont,	Count	..	....	....	Domiciled in Wirtemberg.
Walmoden-Gimborn,	Count	..	....	....	Do. in Mecklenburg.
Wied,	Prince	207	38,898	23,000	Prussia, Hessen.
Windischgrotz,	Prince	19	2,235	10,000	Wirtemberg.
Witgenstein-Berlburg	Prince	22	6,845	10,000	Prussia.
Witgenstein-Witgenstein,	Prince	78	10,777	13,000	Prussia.
Wurmbrand,	Count	..	....	....	Domiciled in Austria.

AUSTRIAN EMPIRE.

(*Kaiserthum Oesterreich.*)

ASTRONOMICAL POSITION.—This great empire is situate almost in the centre of Europe, between 42° and 51° N. lat., and 8° 30′ and 26° 30′ E. longitude.

DIMENSIONS.—The configuration of the empire is irregular; but, with the exception of a narrow strip at its southern extremity, which projects along the coast of the Adriatic, its territory forms a very compact mass, embracing a great diversity of soil and climate, and containing a heterogeneous assemblage of tribes and nations, which differ from each other in language, manners, laws, religion, and degree of civilization. Its greatest length, from Lake Maggiore, in Italy, to the eastern frontier of Transylvania, is about 860 English miles; and its greatest breadth, exclusive of Dalmatia, from the southern frontier of Croatia, to the most northerly point of Bohemia, about 492 English miles. The superficial area is estimated at 12,153 square German miles, or 257,368 square English miles. The frontier line, which is advantageously defined by natural boundaries, extends upwards of 4,250 miles.

BOUNDARIES.—*Southern:*—Turkey, the Adriatic Sea, and the Independent States of Italy. *Western:*—Sardinian States, Switzerland, and Bavaria. *Northern:*—Prussia, the Free city of Cracow, and Prussian Poland. *Eastern:*—Russia and Moldavia.

The component parts of the empire are:—Six countries bearing each the name of Kingdom, viz. *Hungary*, *Bohemia*, *Galicia*, *Lombardy* and *Venice*, *Illyria* and *Dalmatia;* one archduchy, *Austria;* one principality, *Transylvania;* one duchy, *Styria;* one margraviate, *Moravia;* and one county, *Tyrol.* But for administrative purposes these are arranged into fifteen great provinces, as stated in the following table:—

PROVINCES.	*Total Area in square Eng. miles.*	*Area within the German Confed.*	*Area without the Germ. Confed.*	*Total Population in 1840.*	*Population within the German Confed.*	*Population without the German Confed.*	*Population per Sq. Mile.*
1. Lower Austria,	7,663	7,663	. . .	1,409,626	1,409,626	. . .	244
2. Upper Austria,	7,416	7,416	. . .	857,568	857,568	. . .	153
3. Tyrol,	11,003	11,003	. . .	839,755	839,755	. . .	101
4. Styria,	8,687	8,687	. . .	975,309	975,309	. . .	149
5. Carniola & Carinthia,	7,884	7,884	. . .	759,541	759,541	. . .	127
6. Illyrian Coast,	3,096	956	2,140	481,189	151,520	330,569	206
7. Bohemia,	20,245	20,245	. . .	4,174,168	4,174,168	. . .	273
8. Moravia and Silesia,	10,268	10,268	. . .	2,166,638	2,166,638	. . .	280
9. Galicia,	33,566	1,857	31,709	4,797,243	350,000	4,447,243	188
10. Hungary,	89,095	. . .	89,095	12,096,202	. . .	12,096,202	180
11. Transylvania,	21,426	. . .	21,426	2,079,000	. . .	2,079,000	129
12. Military Frontier,	15.213	. . .	15,213	1,203,605	. . .	1,203,605	105
13. Dalmatia,	5,076	. . .	5,076	394,028	. . .	394,028	103
14. Lombardy,	8,396	. . .	8,396	2,547,976	. . .	2,547,976	403
15. Venice,	9,154	. . .	9,154	2,168,553	. . .	2,168,553	314
TOTALS,	258,188	75,979	192,209	36,950,401	11,684,125	25,267,176	189

PHYSICAL ASPECT, CLIMATE, &c.—The aspect of the country, so far as it lies within the limits of Germany, has been already described; the remaining portion will be noticed when we treat of the topography of the various provinces. With respect to climate, German writers divide Austria into three regions or zones, viz. the northern, the middle, and the southern. In the northern zone, which lies between 49° and 51° north lat., and comprises nearly the whole of Bohemia, with the higher parts of Hungary, Moravia, Galicia, and the Bukowine, an extent of about 70,000 square miles, the weather, though colder in winter, and warmer in summer, than in England, bears, in its average temperature, a considerable resemblance to the climate of that country, and of the north of France. In products also there is a remarkable similarity; wheat, barley, oats, and rye forming the bulk of the yearly crops. The middle zone is considerably more extensive, and comprehends the whole of Lower Austria, with the greater part of Upper Austria, Moravia, Hungary, Transylvania, and Galicia, altogether an area of 150,000 square miles. The summer and autumn heats are here much greater than in England; and, in addition to wheat and the other products mentioned above, vines and maize are cultivated in favourable situations. The southern zone comprises Lombardy and Venice, the coasts of Croatia and Dalmatia, with the southern borders of Slavonia, and the Bannat of Temeswar, from 30,000 to 40,000 square miles. Here the winter lasts only two or three months,

and the cold seldom exceeds that of the month of March in England. Not only maize and vines are raised, but also olives, myrtles, and other products of the south. It is proper, however, to add, that in no country does there exist greater variety of temperature in the same latitude, in consequence of the very marked difference in the elevation of the soil; one line of latitudes presenting a succession of mountains, and another a series of plains and valleys. Thus, the Alpine provinces, with the extensive tracts adjacent to the Carpathians, and the lofty barrier between Bohemia and Moravia, partake of all the rigour of the north, though situate to the south of lat. 49°; while Galicia and the interior of Bohemia, though lying to the north of that line, are considerably warmer, because their surface is in general flat, and little elevated above the level of the sea. The average fall of rain is considerably greater in the mountains than in the plains. In Vienna, and the low-lying tracts, twenty-eight inches are a frequent average for the year; but in the mountains the average often amounts to forty inches and upwards. More than a third part of the productive soil of the empire is said to be occupied by forests.

PEOPLE. — The inhabitants of the Austrian Empire may be arranged under five classes, viz. 1. SLAVONS, or SCLAVONIANS, who form more than a half of the total population of the empire, but are divided into several distinct nations or races, of which the following are the principal: — The *Czekhes* in Bohemia; the *Slowacks*, in Moravia and Hungary; the *Poles* in Galicia; the *Rusniaks*, in Galicia and Hungary; the *Windes* or *Wendes*, in Styria, Carniola, Carinthia, and the district of Sillian and Lienz, in Tyrol; the *Slavons* in Slavonia; the *Dalmatians* in Dalmatia; the *Croats* in Croatia, &c.* 2. DEUTSCH, or GERMANS, who occupy the whole of Austria, and the greater part of Styria and Tyrol, but form a minority of the population in Illyria, Bohemia, Moravia, and Silesia, Hungary, and Transylvania. They are also found to the north of Verona and Vicenza, in the government of Venice. 3. GRÆCO-LATINS, consisting of the *Italians* who are found almost unmixed in Lombardy and Venice, and occupy the southern part of Tyrol, and the maritime districts of Illyria and Dalmatia; and the *Valaques*, *Wallacks*, or *Wallachians*, who form the greater part of the population of the Bukowine, and are very numerous in Transylvania, Hungary, and the Military frontier. 4. MAGYARS, who form the dominant race in Hungary, and are numerous in Transylvania. 5. Besides all these, there are *Jews*, most of whom live in Galicia, Bohemia, Moravia, and Hungary; and *Zinganies* or *Gipsies*, *Armenians* and *Greeks*, who are scattered over all the eastern provinces of the empire. The average annual increase of the population, taken during the nine years from 1819 to 1827, amounted to 1.193 per cent.; thus appearing to double itself in 51½ years. The proportions of these various races may be stated thus: — Slavons, 18,500,000; Germans, 6,000,000; Italians, 5,300,000; Wallachians, 900,000; Magyars, 4,500,000; Armenians, Albanians, Gipsies, &c. 150,000; Jews, 667,139.

RELIGION. — The Roman Catholic is the dominant religion, and is professed by the great majority of the population. Next to it is the Greek church, which prevails chiefly in Transylvania, Southern Hungary, Slavonia, Croatia, and Galicia. Calvinism and Lutheranism are professed by a considerable portion of the population, mostly in Hungary and Transylvania. In Transylvania, Unitarians, or Socinians properly so called, are only to be found.† *Mennonites*, *Jews*, and other sectaries, are to be met with throughout the empire. In 1840, the population, classed according to the different creeds, stood thus: — Roman Catholics, 25,704,119; Greeks, 6,529,300; Protestants, 3,536,849; Jews, 667,139; all others, 48,022; Military, 464,972, whose religion is not given; total, 36,950,401; but every sort of employment or occupation, the law, the army, the civil service, are open to all, without respect to creed. The Emperor is in all but the name head of the Church, and the authority of the Pope was till recently almost extinct. The features of Popery in the Austrian hereditary states were essentially modified by the Emperor Joseph II who carried his reforms in everything to a great extent. His first and heaviest blow fell upon the monasteries; he decreed that the regular clergy (monks) should be in all points subordinate to the seculars; that the mendicancy of the friars should cease; and that the religious fraternities thenceforth allowed to exist should be limited to such numbers only as were actually employed in pastoral or scholastic duties. In carrying these decrees into effect, the greater part of the monastic establishments were actually suppressed; while the remaining communities were conso-

* The several Slavonic nations inhabiting the southern border of the empire, comprising Dalmatia, Illyria, Croatia, Servia, Carniola, Carinthia, and Styria, with a population of about 5,000,000, speak seventeen distinct dialects, upon which Dr. Gai of Agram has grounded a common language, and brought it into general use, since 1836, in the Illyrian national newspaper, entitled *Ilirske Narodne Nowine*.

† That is, professing the doctrines of *Socinus*, the whole of which are not received by all Unitarians.

lidated by drafting together several into one large establishment of the same order. His reforms extended even to the discipline and the ritual of the church; and among the innovations introduced by him, and perpetuated by his successors, no one is more remarkable than the performance of the greater part of the services in the vernacular tongue. The mass remains in Latin; but in the devotional exercises, in which the people join, the prayers, the litanies, and the psalms, the vernacular language alone is now employed. There are 11 Roman Catholic archbishops, 1 Greek united archbishop, 1 Greek schismatic archbishop, and 1 Arminian archbishop. The Catholic church has, besides, 59 bishops, with chapters and consistories, and 43 abbots of richly endowed monasteries, in Austria, Styria, Illyria, Bohemia, and Moravia. In Hungary there are 22 endowed abbots, 124 titular abbots, 41 endowed and 29 titular prebendaries, and 23 college foundations. Transylvania has 3 titular abbots, and upwards of 150 monasteries and convents. Galicia contains 70 monasteries. The Greek United Church has 1 archbishop and 1 bishop in Galicia, and 5 bishops in Hungary. The Arminian Catholic Church has an archbishop at Lemberg. The Greek Church has 1 archbishop, with 10 bishops and 60 deans. The Protestants are placed under 10 superintendents for the Lutherans, and 9 superintendents for the Calvinists. The Unitarians have 1 superintendent, and form 164 parishes. The total number of the Roman Catholic secular clergy is 48,589, of whom 7374 are in Hungary. The monastic order consists of 9896 individuals of both sexes, and of these Hungary contains 3056. The clergy of the Protestant Confessions, and the orthodox Greeks, amount together to 10,803; and of this number 6449 are in Hungary. The great principle which pervades the whole ecclesiastical government of the empire is the supremacy of the civil power over the persons, the property, the beneficiary appointments, and even the spiritual functions of the clergy of all denominations. Every person promulgating a papal bull, edict, or ordinance, without the previous sanction of the Crown, is subject to confiscation of property and imprisonment; and no Austrian subject can be excommunicated by any ecclesiastical authority, or even by the Pope himself, without the Emperor's consent. The right of appointing the bishops varies in the different States. In Hungary the right is vested absolutely in the Crown, without papal confirmation; in the German States it belongs equally to the Crown, but requires confirmation from Rome. In Italy the nomination is formally, but not really more connected with Rome. The Archbishop of Milan and his four suffragans are appointed by the Emperor, but in the nomination of the latter, he ought properly "to attend to the papal recommendation, unless having great cause to do otherwise." The Emperor likewise appoints the Patriarch of Venice; but his suffragans are nominated by the Pope from a list of three. In Hungary and Transylvania, the Protestants choose their superintendents, who are controlled by district inspectors. The greater part of the Magyar inhabitants of Hungary are Calvinists; and Protestants enjoy, in that kingdom and its dependant lands, equal rights with the Catholics. The richest see is the primacy of Hungary, the archbishopric of Olmutz being next in importance. The right of presentation to livings is vested, in general, in the landed proprietors and various corporations, as in England; but the parishes in the gift of the Crown, as heir to the right of the suppressed convents, are numerous. The secular clergy derive their income from a variety of sources, such as glebes, endowments, tithes, fees, or parochial assessments; but in general they are poorly paid. The patronage belongs partly to the Crown, and partly to bishops, corporations, and private individuals. Their conduct is strictly watched, and ministers of irregular habits, if found irreclaimable by admonition or fine, are removed to a kind of monastic penitentiary, and kept on short allowance for a given period, or for life. — *Turnbull's Austria*, vol. ii.

EDUCATION. — The system of education pursued in all the Austrian States is nearly the same. Primary or elementary schools are established throughout the empire. In the Austrian provinces they appear to be adequate to the wants of the population; but in Hungary, and the more remote parts of the empire, there are still great deficiencies. In the lowest or the *Volks-Schulen* (people's schools), the instruction, in addition to that afforded by the ministers of religion to the children of their respective creeds, is confined to reading, writing, and accounts. Above these are *Gymnasia*, or high schools, for the classics and mathematics, and commercial academies in the towns; and lastly, the nine *Universities* of Prague, Vienna, Padua, Pavia, Lemberg, Gratz, Olmutz, Innspruck, and Pesth. The general supervision of the schools is entrusted to the clergy, the episcopal consistories taking charge of them in the Roman Catholic provinces, and the Calvinistic or Lutheran superiors, in districts where their religion predominates. The whole of these establishments are regulated with a

view to strict uniformity of system, and to their connection with some one or more of the religious professions recognised by the State. At the head of the department is the Hof-Studien-Commission at Vienna, a board of lay-commissioners, who are in constant communication with the religious consistories, and examine and report on every point connected with instruction, profane or sacred, civil or military; but have no legislative power or authority of any kind. The expense of these establishments is defrayed from various sources; partly from the education and religious funds formed by the Emperor Joseph II. out of the confiscated estates of the suppressed monasteries, from occasional loans from the Imperial Exchequer, or contributions from the great landed proprietors, or the parishioners themselves. Attendance at school is not strictly compulsory, as in Prussia, but the disadvantages of non-attendance are so great as hardly to leave an option; for not only does the neglect operate as a perpetual disqualification for public or private employment, but the parish priest is forbidden to marry any one not provided with a certificate of education. This system is spreading rapidly through all parts of the empire, except Hungary, where very little has yet been done for education. It is calculated that about three-fifths of the rising generation are at school. Besides all these institutions, there are endowed schools of a superior order in the principal cities, at which the greater part of the higher classes are educated. These are also under the superintendence of the authorities; no private academy can be opened without a license. The instruction given in all the public establishments is gratuitous; but it is customary to pay about 12 florins at the gymnasia, and from 18 to 30 at the universities towards the maintenance of poor students. These, however, are not, indiscriminately admitted, as in the north of Germany, but must undergo a public examination; and only a limited number of the best qualified are allowed to benefit by the poor fund and the endowed scholarships. But the principle of instruction which pervades all the schools is not of the most beneficial kind; the tendency of the system is to check the expansion of the mental powers, by confining the attention of the scholars to a prescribed routine of verbal tuition; and the result is, that the pupils leave school with a very small amount of actual knowledge; but having been embued with the doctrines and opinions which are sanctioned by the government, they are found to be ready instruments in carrying into effect even its most obnoxious measures.

GOVERNMENT. — In all the provinces, except Hungary and Transylvania, the Emperor possesses absolute authority; but, practically, the government is administered in the way best calculated to be beneficial to his subjects; so far at least as that is consistent with his general system of keeping all the provinces in a state of weakness, that they may be the more easily ruled. Their greatest practical grievance, indeed, is the expense of supporting, and being forced to serve in, the enormous standing army, which is found necessary to keep in subjection such heterogeneous masses of half civilized and discontented people, all striving to recover and secure their separate nationality. The whole legislative authority is vested in the Emperor, who proceeds either by original edict, or by rescript, on the application of some person, or some public body. No approval, or registration of any sort is required, except on financial subjects, which are submitted for approval to the Provincial States; and every new law is submitted to a board, whose duty it is to collect the opinions of the persons most conversant with the subject. The Provincial States meet once a-year or oftener, if necessary, and consist partly of nobles and clergy, who have seats in their own right, and partly of representatives of the minor clergy, nobility, and burghers. Their business is to vote the supplies, or rather, to receive and register the laws framed for that purpose by the Emperor; to apportion the amount among the different districts of the province; and to discuss such other local matters as they are allowed to controul. The executive government acts through certain councils or boards, each of which has its chancellor or president, who communicates with the provincial councils, and with the cabinet. The grand object of the administration is steadiness and uniformity of action, which it secures by enforcing the strictest regularity in its functionaries, who rise gradually from the lowest departments to the highest; and of every candidate for employment, without exception, it is required that he has been educated within the country, in a seminary established under the sanction of government. Hungary and Transylvania have each a separate chancery, and are governed by their own laws; the Italian States have also a jurisprudence of their own, and are governed by a Viceroy; but the German, Polish, and Illyrian provinces, are under the direct controul of the Imperial Chancery at Vienna, and are all governed by the same code of laws, both civil and criminal.

The present Empire of Austria was founded so lately as 1806, when the Holy

Roman (German) Empire having been dissolved by Napoleon, the Emperor Francis II., assumed the new title of Emperor of Austria. The imperial family are the descendants of Francis Duke of Lorraine, who married Maria Teresa, the eldest daughter and heiress of the Emperor Charles VI., the last male of the House of Hapsburg, and was through her influence elected Emperor in 1745. Dying in 1765, he was succeeded in the imperial dignity successively by his two sons, Joseph II., who died in 1790, and Leopold II., who died in 1792. The latter was succeeded by his son Francis II., who, as already mentioned, was the last Emperor of Germany, and the first of Austria. The Empress-Queen, Maria Teresa, died in 1780, and was succeeded in her hereditary States by her son the Emperor Joseph, who then became, in right of his mother, King of Hungary and Bohemia, Archduke of Austria, &c.* He was a prince distinguished as being more ready to grant free institutions than his subjects were to receive them, and in the words of the inscription on his statue, "Vixit reipublicæ non diu sed totus." The present Emperor, Ferdinand I., who succeeded his father Francis in 1835, being incapacitated for his high duties by mental and bodily weakness, the government is managed by a council, consisting of his brother and heir-presumptive the Archduke Francis Charles; his uncle, the Archduke Ludwig (Louis); the Furst (Prince) Clement von Metternich-Winneburg; and the Graf (Count) Kolowrath-Liebsteinsky. But they are obliged to follow a tame and pacific policy. With the Hungarians and Bohemians strenuously claiming their national rights, and the Italians watching for an opportunity of vengeance upon their oppressors, the Austrian government is compelled to remain quiet. It is from Hungary and Italy that they draw their principal resources, both military and economical. Should the Hungarians become refractory, the military power of the empire would be paralyzed; and should Italy revolt, the bankruptcy of the government would be inevitable. It has already failed several times, and has defrauded its creditors and the public to a great amount. Public faith has never been preserved in Austria, indeed the very name used to furnish a subject for ridicule. Since the death, however, of the late Emperor, the government has exhibited symptoms of better policy; and, if they persevere in their new course, they may yet be able to retard for a time the expected dissolution of this ill-assorted empire.

In Austria the nobles form a distinct order in the State; but in all the provinces, except Hungary, their privileges and prerogatives consist of little more than some legal distinctions of form in the commencement of actions at law, and their admissibility without official character, to the court of the Emperor; together with exemption in the German, but not in the Italian provinces, from the military conscription, and from certain disagreeable but necessary offices in municipal and district administrations. There are several gradations among them; namely, *Fursts* (princes); *Grafs* (counts); *Freyherrs* (barons); and *Ritters* (knights, squires, or gentlemen.) All these together constitute the *Edelstand*, or nobility; but none of them enjoy any privileges above the others, except in points of personal dignity and etiquette, and the capability of holding certain high nominal offices of ceremony about the person of the Emperor. The sovereign, at his pleasure, raises plebeians to the rank of nobles; and the nobility, whether titled or untitled, goes to all descendants alike, without respect to primogeniture; it consequently happens that many nobles are reduced to poverty, and found in very humble stations. The total number of male nobles, of all these classes, amounted, in 1834, to 385,104.† The highest personal honour which the Emperor can bestow is the order of the Golden Fleece, instituted by Philip Duke of Burgundy in the fifteenth century, and the sovereignty of which has fallen to the Emperor by inheritance.

FINANCES.‡—The Austrian government publish no official accounts, yet they have always found it necessary to communicate in general terms the actual position of the finances to the principal bankers and capitalists in Vienna; and, in the year 1835, the following was, in round numbers, the understanding which prevailed upon this subject. The *revenue* was estimated at 130,000,000 florins, or about £13,000,000 sterling. The

* According to German usage, all the princes of the family bear the same title of *Archduke of Austria* (Erz-herzog von Oesterreich), though only one of them actually possesses the archduchy. The archducal family originated in the thirteenth century with Albert of Hapsburg, upon whom his father, the Emperor Rodolph, bestowed the duchy of Austria, which he had taken from the king of Bohemia. In the course of time, Albert's descendants acquired possession, by marriage or otherwise, of the kingdoms of Hungary and Bohemia, and other adjacent territories; and from the middle of the fifteenth century, the head of the family was always elected Emperor. In the sixteenth century the family divided into two branches, the elder becoming king of Spain, while the younger retained Austria, Hungary, Bohemia, &c., with the imperial dignity. The Spanish branch became extinct by the death of King Charles II., in 1700; and the male line of the Austrian branch, in 1740, by the death of the Emperor Charles VI.

† *Turnbull's Austria*, vol. ii. ch. 12

‡ *Ibid.* vol. ii. chap. 11, 12.

expenditure, exclusive of the war department, at 87,500,000 florins, or £8,750,000 sterling. The latter was thus composed: —Interest of the public debt, 40,000,000 florins; civil administration, 44,000,000; expenses of the Imperial family and establishments, 3,500,000, leaving for the war department only 42,500,000 florins, while the actual expenditure of that department amounted to 60,000,000; thus occasioning an annual deficit of £2,000,000 sterling, which has been made up by repeated loans. The total amount of debt bearing interest was estimated, in 1835, at about 550,000,000 florins, or £55,000,000 sterling; but in that year a loan of £4,000,000, and again in 1839, another loan of nearly the same amount, were contracted. The details of the public income and expenditure, for the year 1834, are thus stated by Mr. Turnbull, from documents which he was permitted to examine: —

INCOME.	
1. DIRECT TAXES.	*Florins.*
Land tax,	38,987,954
House tax,	3,859,178
Income tax on trades,,	2,498,234
Personal tax, now discontinued,	1,307,451
Tax on inheritances,	879,160
2. INDIRECT TAXES.	
Tax on consumable articles,	17,841,347
Customs on goods,	12,037,692
Stamps,	3,232,048
Tax on processes, and official incomes,	1,882,710
Lottery,	3,363,682
Post-office — letters,	1,417,362
,, horses,	376,952
Barriers,	1,854,157
3. MONOPOLIES.	
Salt,	19,404,807
Tobacco,	8,784,376
Gunpowder,	9,329
4. DOMAINS,	3,460,666
5. MINES,	1,952,410
6. HUNGARIAN REVENUE.	
Contribution, or land-tax on the peasant lands,	5,000,000
Toleration-tax on Jews, Bishops' tax for fortresses, Zips towns, &c.,	336,000
TOTAL,	129,746,648

EXPENDITURE.	
I. CIVIL DEPARTMENT.	*Florins.*
Finance Department,	14,619,220
Imperial Chancery (including 1,004,350 florins, for diplomatic services),	1,801,168
Police department,	1,643,504
Military expenditure, included in the civil department,	2,586,306
Department of public audit,	2,703,723
Justice,	4,708,734
Establishments of the court,	1,461,139
Council of State,	282,282
Kataster, or survey of lands,	69,344
Local administrations, including public works in the German provinces,	8,774,066
Do. in Lombardy,	2,987,935
Do. in Venice,	2,580,169
	44,217,590
II. MILITARY DEPARTMENT,	60,000,000
III. INTEREST AND SINKING FUND OF PUBLIC DEBT,	40,000,000
IV. IMPERIAL FAMILY,	3,500,000
	147,717,590
Sum of over expenditure,	17,970,942
TOTAL,	129,746,648

ARMY AND NAVY. — Austria has taken so prominent a part in the wars of the last and the present centuries, that the nature and extent of her military resources are subjects of great interest. The disposition of the people of Hungary, and of the more remote provinces is well adapted to a military life. They are accustomed to pass their time out of doors, to indulge in active exercise, to follow the chase, and to occupy themselves with the care of horses. To such men, marching and encampment are but a slight deviation from their ordinary habits; to accustom them to the restraints of discipline was found, however, to be no easy task; but by dint of perseverance this has been at last effected. In the last years of the late war (1814–15,) the numerical force of the Austrian army, including troops of every description, amounted to 650,000 men; but at present the peace establishment amounts to 272,204 men, both officers and privates; viz. cavalry, 44,970; infantry, 196,377; and artillery, including engineers, sappers and miners, artificers, pontoonmen, and train, 30,877. For the purpose of keeping this force at its full complement, a particular district, containing from 300,000 to 500,000 inhabitants, is appropriated as a recruiting ground to each of the German, Illyrian, and Galician regiments. Every male, whether peasant or citizen, in these districts, is liable to the ballot; and is subject to do duty in the regiments of the line, if not under nineteen, or not above twenty-nine years of age; and, if above the latter age, and not above fifty, is liable to be called out for the landwehr, or militia. No exemptions are granted, except in the cases of the nobility and clergy; and in certain contingencies, such as a family being wholly dependent on the labour of a male relative. Eight regiments of the line are levied from the Italian provinces; but no landwehr is there raised. The Hungarian and Transylvanian troops are recruited by bounty, or by certain quotas of men, which the nobles possessed of landed property, and the royal free towns, are bound to furnish. In the military frontier, every male capable of service is liable; in fact a certain portion of them are always under arms, and form a superb body of 30,000 infantry, ready for service in any emergency, and maintained at very little expense. The period of service

in all but the Hungarian regiments is eight years. Invalids and veteran soldiers are either received into hospitals or allowed small out-pensions by way of favour only; but nothing is allowed to those who retire at the termination of their legal period of service.

The military schools of the empire consist of:—the Academy of Engineers in Vienna, established in 1717, in which 79 pupils are gratuitously educated; the Military Academy at Wiener-Neustadt, for 327 pupils, who are all educated at the public expense, and 117 pupils, for whom the States of the several provinces have founded endowments; the Military Academy at Waitzen, in Hungary, for 200 pupils; the cadet companies or schools of Olmutz and Gratz, each of which receives from 124 to 134 pupils; several artillery schools; the Military College or Academy at Milan; 48 seminaries for the education of the sons of military officers and soldiers; 54 regimental schools; a Military Geographical Institution at Milan; the Medico-chirurgical Academy of St. Joseph at Vienna, for the education of medical officers; the Veterinary School at Vienna, and the Academy for educating gunsmiths at Steyer in Upper Austria.

The whole empire is divided into twelve military provinces, each under the charge of a general officer, as stated in the following table:—

Provinces.	*Headquarters.*	*Provinces.*	*Headquarters.*
1. Archduchy of Austria,	Vienna.	7. Lombardy and Venice,	Verona.
2. Illyria, Styria, and Tyrol,	Gratz.	8. Slavonia and Syrmia,	Peterwardein.
3. Bohemia,	Prague.	9. Croatia,	Agram.
4. Moravia and Silesia,	Brunn.	10. Upper Hungary,	Temeswar.
5. Galicia,	Lemberg.	11. Transylvania,	Hermanstadt.
6. Hungary,	Buda.	12. Dalmatia,	Zara.

The Austrian navy is still very small, but the possession of Venice and Trieste, and of the fine harbours along the coast of Dalmatia, hold out the prospect of its being in the course of time considerably increased. In 1837, it consisted of eight ships of the line lying in the arsenal at Venice; eight frigates, four sloops, six brigs, seven schooners or galleys, and a number of minor vessels. Venice is the chief naval station; and the arsenal is one of the most interesting establishments of the city; but that port being inconvenient and insecure, the government has been occupied for several years in fortifying, at great expense, the harbour of Pola, in Istria, with the intention of rendering it the principal station of the navy. The Academy of Naval Cadets is also established at Venice, and contains twenty pupils, who are educated at the public expense. The seamen are chiefly Venetians, Istrians, and Dalmatians; the number on service in 1839 was 2326; besides a regiment of marine artillery of 945 men, and a battalion of marines, of 1276 men. The vessels in commission amounted to three frigates, two sloops, five brigs, and a number of small vessels and gunboats.—(*Raumer's Italy*, I. 96.)

Since the loss of Flanders, the Austrian mercantile navy has been confined to the ports of the Adriatic, and is of very modern date. It is now, however, very respectable; the ships are strong and handsomely built, and well manned and provided. The seamen are expert, temperate, and orderly, and the laws for the regulation of the merchant service are excellent. The greater number of vessels of large burden, probably two-thirds of the whole, belong to Trieste; the rest belong to Venice, Fiume, Ragusa, and the Bocche de Cataro. The number of Austrian vessels employed in foreign trade is from 800 to 900, manned by about 16,000 men and boys; their tonnage amounts to about 200,000 tons. In the coasting trade about 200 vessels are employed, averaging 40 tons each. The fishing trade is inconsiderable.*

PRODUCTIVE INDUSTRY AND COMMERCE.—In a country of which so much is covered with mountains, the extent of mineral produce can hardly fail to be large. Iron ore is abundant in many parts of Bohemia, Upper Austria, Styria, and Carinthia. Iron and native steel are found in such abundance in Styria and Illyria, that the ore is merely quarried from mountains which are solid blocks of carbonate of iron. The mountains near Eisenerz in Styria, and at Huttenberg in Carinthia, literally justify the expression. The production indeed of iron is only limited by the want of fuel to smelt the ore. Nor would this inconvenience have been so long felt, had not the government officers taken the direction of that branch of industry, and materially hindered the progress of the art of mining. It has long been a standing regulation for the mining-board to refuse permission to work mines unless the applicant could prove that he possessed a certain extent of forest land to supply fuel for smelting; and this has had the effect of limiting the number of mines in provinces where the supply of ore is inexhaustible, and consequently of both raising the price of the metal, and deteriorating its quality. In all the provinces where iron ore

* *Bowring's Report*, p. 137, 138.

is abundant, large fields of coal are found, of inferior quality no doubt, but so easily worked, as to make it unnecessary to economize them; yet it will scarcely be believed that the Austrian mining-board has for years refused to grant permission to work iron mines, claimed on the possession of a coal-bed of this kind, alleging that the coal would not be found to answer for smelting; and it was not till the present year, when the house of Rosthorn Brothers, at Wolfsberg, in Carinthia, proved indisputably that these coals could be used not only for smelting, but also for welding and working the metal in other stages, that the government granted the right to work a mine founded upon the possession of a coal-bed instead of a forest. Great exertions have been made by patriotic individuals and companies to foster the iron trade; but everything has been paralyzed by the restrictions under which it is laid, and which have been increased instead of being removed. The native steel of Austria is, however, an article eagerly sought for by foreign nations, in spite of the restrictions which impede the production and exportation not only of iron and steel, but also of other articles of mining produce scarcely inferior in importance. The empire abounds in copper, zinc, and sulphur, and various other metals and minerals of commercial value; particularly in rock salt, mines of which may be said to extend, at intervals, from Moldavia to Swabia, comprehending those of Wallachia, Transylvania, Galicia, Upper Hungary, Upper Austria, Styria, Salzburg, and Tyrol. Those of Bochnia and Wielieeska in Galicia are known to be the largest salt-mines in Europe. The table on next page is the official return of the produce of the Austrian mines for the year 1837.

"To an English traveller agriculture appears in a very backward state, even in the best provinces of Austria. Capital has as yet been applied to it on a very limited scale, while the ploughs and other implements in use are much inferior to those of England. Add to this, that scientific instruction in agriculture, though the subject of various publications in the Protestant part of Germany, is in a manner unknown in Austria and the Catholic countries in the south. Nowhere, however, is there a fairer field for improved husbandry, for no part of Europe presents a greater extent of good soil. Lower Austria has, like Lombardy, the advantage of extensive plains watered by streams flowing from a range of mountains which form the background of the prospect contemplated by those who travel along the banks of the Danube. Moravia has a similar climate, and almost equal advantages of soil and position. Galicia is likewise fertile, the most so perhaps of any of the Polish provinces; while in the south and east of the empire many of the plains of Hungary and Transylvania might be rendered productive were the population more dense, and acquainted with the method of draining, irrigating, and properly tilling the ground. The land of second rate fertility is in the Alpine provinces. The slopes of the mountains, up to a certain height, are favourable to pasture, and the raising of oats and other like grain; but in many parts the height is so great as to outweigh the advantages of latitude, and to confine the inhabitants to a scanty return for their labour.

COMPARATIVE CULTURE of GREAT BRITAIN, FRANCE, and AUSTRIA, exhibited in Proportions of 100.

	Great Britain and Ireland.	*France.*	*The Austrian Empire.*
Land under tillage,	34	44	34
Vines, orchards, gardens,	1	5	3
Land in grass, whether natural or sown,	40	14	17
Forests, plantations, copses,	5	17	26
Poor land, as heath, marshes, commons; also land totally unproductive, as rocks, summits of mountains, lakes, beds of rivers, roads,	20	20	20
	100	100	100
Comparative Population.—Inhabitants per square mile,	220	165	130

"This table suggests several conclusions of importance. First, the proportion of land altogether uncultivated is nearly equal in the three countries; the mountains of Scotland, the bogs of Ireland, and the commons of England, containing a surface corresponding to that of the high mountains in the Alpine provinces of Austria, and the marshes and sandy levels of Hungary. But the proportion of land covered with forests, and thus lost to useful cultivation, is far greater in France, and still more in the Austrian empire, than in this country. The inducement to convert such land into pasture is far greater in Britain and Ireland, in consequence of our numerous population, and the high price of butcher-meat, wool, and hides. To this is to be added a very different consideration, viz. that the facility with which all our large towns are supplied with coal, makes it quite unnecessary to keep up forests, as on the continent, for the purpose of fuel.

"Next, as to the land under tillage, the great proportion of such in France is

PRODUCE of the MINES in the AUSTRIAN EMPIRE, shewing those which are worked upon Private Account, as well as those belonging to Government, for the year 1837. (The Austrian cwt. = 123lbs. English.)

DISTRICTS AND MINES.	*Gold.*	*Silver.*	*Quick-silver.*	*Tin.*	*Copper.*	*Lead and Lead Ore.*	*Litharge.*	*Spelter.*	*Zinc.*	*Raw Iron.*	*Cast Iron.*	*Antimony.*	*Alum.*	*Copper Vitriol.*	*Iron Vitriol.*	*Cobalt.*	*Arsenic.*	*Sulphur.*	*Coals.*	*Manganese.*	*Graphite.*
	366 fl. 53,753	24 fl*.	Cwts. 225 fl. 15 kr.	Cwts. 63 fl. 41 kr.	Cwts. 57 fl. 40 kr.	Ore 5fl. 30kr. 14 fl. 48 kr.	Cwts. 9 fl. 45 kr.	Cwts. 1 fl.	Cwts. 10 fl. 50 kr.	Cwts. 3 fl. 27 kr.	Cwts. 6 fl. 6. kr.	Cwts. 9 fl. 12 kr.	Cwts. 6 fl. 37 kr.	Cwts. 10 fl. 54 kr.	Cwts. 1 fl. 13 kr.	Cwts. 7 fl. 15 kr.	Cwts. 10 fl. 15 kr.	Cwts. 6 fl. 32 kr.	0 fl. 7½ 2 kr.	39 kr.	3 fl. 23 kr.
Lower Austria, ...Private mines,.....	..	..	..	..	..	..	..	..	..	19,948	....	..	1,737	..	..	..	..	..	450,661	..	757
Upper Austria,.....Salzburg Government mines,....	70	145	..	..	366	..	2	..	..	26,310	821	..	..	266	..	..	..	501	....	..	..
Private mines, ...	..	56	..	..	..	157	..	..	..	2,514	397	..	..	..	..	..	326	..	3,790	90	..
Styria, ...Government share of Innerberg,.	..	..	..	..	..	..	..	..	..	216,017	....	..	..	..	..	..	..	..	....	..	..
Neuberg and Maria Zell, ...	..	..	..	..	..	..	727	..	..	24,016	13,519	..	..	..	..	..	..	..	4,239	..	..
Private mines,.....	7	605	3	..	1,123	61	..	..	..	402,852	4,294	..	1,852	363	..	542	..	729	421,316	..	2,254
Carinthia & Carniola, Government mines, ...	..	.	3326	..	..	16,932	..	..	..	....	....	..	..	..	..	..	..	..	....	..	..
Private mines,.....	2	1	4	..	..	39,555	..	..	..	377,212	14,111	..	81	..	..	..	..	..	92,653	..	43
Illyrian Coast,.....	..	..	..	..	..	..	..	..	..	....	....	..	767	..	1,215	..	..	..	35,200	..	..
Tyrol,.....	21	513	..	..	1,518	655	327	..	..	32,684	3,416	..	..	..	..	..	..	..	10,748	..	..
Private mines, ...	1	108	..	..	1,318	2,395	..	..	..	21,242	1,723	..	..	..	..	..	..	..	4,012	..	..
Bohemia,.....	..	21,313	..	34	..	7,559	12,912	3073	..	37,023	22,272	..	..	..	..	30	..	..	....	..	..
Private mines, ...	..	1,922	..	1323	..	18,238	1,172	..	..	215,422	67,958	..	5,211	3853	30,572	..	1080	7,502	2,745,010	135	30,486
Dalmatia, ...	..	..	..	..	..	..	..	..	..	....	....	..	..	..	..	..	..	..	134,052	..	..
Moravia and Silesia,..Private mines, ...	..	..	..	..	62	..	..	..	..	127,694	40,195	..	2,240	..	..	..	..	..	831,572	..	1,120
Galicia,.....	Swoczowice,.....	..	418	..	..	..	..	..	..	..	....	....	..	..	..	..	..	..	5,071	....	..	..
Private mines, ...	..	..	..	..	2,240	215	410	..	..	30,803	56,086	..	..	..	..	..	..	..	....	..	..
Lombardy,.....	Private mines, ...	..	..	..	..	..	..	..	..	51,822	5,498	..	..	..	..	..	..	..	39,765	..	..
Venice,.....	Government mines, ...	..	..	..	..	3,329	359	..	493	..	....	....	..	..	..	9,642	..	..	158	....	..	..
Private mines, ...	..	..	..	..	..	102	..	141	..	....	....	..	..	..	..	..	..	..	2,120	..	..
Hungary,.....	Government mines,	1838	51,847	..	..	28,486	18,659	..	..	..	251,539	18,194	3350	..	..	..	..	..	5,252	99,788	..	..
Private mines, ...	581	12,377	..	..	9,442	5,140	7,682	..	1717	10,581	13,979	..	12,310	..	..	2082	..	..	180,122	..	..
Transylvania,.....	Government mines,	712	338	..	..	300	348	..	..	..	13,212	786	..	..	..	..	..	..	..	....	..	..
Private mines, ...	2773	6,161	30	..	908	2,397	..	..	..	14,847	55	..	..	..	87	..	..	..	....	..	..
Military Frontier,...Private mines, ...	..	403	..	..	..	3,605	1,451	..	..	15,097	5,456	..	..	..	..	..	..	..	....	..	..
Total produce of the Empire, ...	6005	96,207	3363	1357	49,092	116,377	24,689	3707	1717	1,890,835	268,790†	3350	24,189	4482	41,516	2654	1406	19.213	5,055,948†	225	34,660
On private account, ...	4087	43,103	37	1323	36,012	76,329	4,663	3214	1717	1,440,556	212,509	1978	24,181	4216	31,874	2624	1406	8,231	5,040,961	225	34,660
Produce of the Government mines,...	1918	53,104	3326	31	13.080	40,048	20,066	493		450,279	56,281	1372		266	9,642	30		10,982	14.987		

* Value in florins = 2*s.* English, each florin divided into 60 kreutzers.

† N.B. The owners of many mines in Hungary dispute the right of the crown to levy a tax of the tithe of the produce in that country, and refuse to give regular returns. The quantity of iron and coals gained may therefore be estimated higher

owing to the lower orders living almost wholly on bread and vegetables, to the exclusion of animal food. In Austria the proportion of land in tillage is equal to that in Great Britain; but there is the greatest difference in the nature of the cultivation, the produce in even the best districts of Lower Austria being 30 per cent. less than would be obtained from similar soils in this country. In the nature of the produce there is a considerable resemblance, the bulk of it in either country consisting of wheat, barley, oats, rye, pease, beans, potatoes, along with flax and hemp. Of rye, the proportion raised is larger in Austria; that of potatoes much smaller. Maize is raised in the southern provinces of Austria, as of France, and is said to yield much more nourishment for either men or horses than could be obtained from wheat on a similar soil.

"The northern parts of the empire, viz. Bohemia, Galicia, and part of Moravia, are too cold for vines; but in the central part of the empire they are cultivated extensively, and wine is sold in large quantities for home consumption. The prices of the different qualities vary from sixpence to one shilling a bottle. The port is far inferior to that obtained from France, in consequence chiefly of the want of conveyance. Lower Austria and Hungary, the fittest countries for the vine, have navigable rivers only to the eastward, and these lead to countries which either raise wine for their own use, or are too poor to make purchases from their neighbours. The exports from the Austrian States are thus limited to small quantities of choice wines, such as the well-known Tokay, which is raised on the last chain of the Carpathians, near the district of Zemplin. This wine is cultivated along a tract of about seventy square miles: its qualities are various; the richest kind proceeding from the grape with little or no pressure; while the inferior sort is said to be made from the dried grape, reduced into a sort of pap, and mixed with other Hungarian wines. But it by no means follows that all the wine sold under the fashionable name of Tokay is the product of the district in question; for, even in Vienna, there is not perhaps a tenth of real Tokay among the wines which bear that name.

"Manufactures have in the last and present age received considerable extension in the Austrian dominions. They are still, however, on a footing very different from those of our country. In England they are generally conducted on the plan of particular towns or districts restricting themselves to specific branches; as Manchester to cottons, and Birmingham to hardware. Hence our minute division of employment, our nicety in workmanship, and the surprising quantities produced. But in Austria the case is different: woollens, linen, hardware, and of late years cottons, are made in almost every place of considerable population; a sure proof that their establishments are on a small scale, and that they avail themselves very imperfectly of local advantages, or of the division of labour. In many parts, indeed, weaving and other sedentary work is performed in cottages, as was the case in England a century ago. Spinning wool and flax has from time immemorial been the habitual employment of the lower class of females in Germany; and still continues to be so, notwithstanding the competition of machinery. Linens are woven in every province of the empire; but the finest qualities are made in Lower Austria, Moravia, and certain parts of Bohemia. These countries supply little for export beyond the limits of the empire, but a great deal to the adjacent provinces. Woollens also are a very general manufacture throughout the empire. As to hardware, the mines in the mountainous districts supply an ample store of materials, the manufacture of which takes place partly on the spot, partly in the larger towns, such as Vienna, Prague, and Karlsbad. Bohemia is remarked for the number of its glass-works, a consequence of fuel being cheap in several districts which have the advantage of water conveyance. Hungary, Transylvania, and the Buckowine, having extensive pastures, as well as forests containing vast herds of cattle in a wild state, hides are an article of export from the same cause as in the thinly-peopled provinces of Russia or the wilds of Buenos Ayres. A very different object of trade, paper, is also made to a considerable extent in the Austrian States, in consequence of the cheapness of linen rags.

"All these are manufactures of old date; but cottons are comparatively of recent introduction, and are confined to Vienna and some of the principal towns. The cheapness of labour is in favour of such undertakings in Austria; the obstacles to it are the distance which the raw material, whether landed at Trieste or at Hamburg, must be brought by land, as well as the inferiority of the machinery to that of England.

"Comparing these different manufactures with those of an improved country like England, we find the foreign articles generally higher in price, and more homely in appearance, but at the same time more durable than ours. This distinction is found to hold in regard to fabrics the most different in their nature; the muskets made in

Germany and France being heavier, exactly as their woollens, cottons, and linens, are thicker than ours. Lightness of workmanship and dispatch in completing an article are the result of long practice: the comparatively limited experience of foreigners, and their imperfect subdivision of work, require both longer time and a larger consumption of raw materials."—*(Encyc. Brit., Seventh Edition*, IV. 230, 231.)

The following tables, from official sources, contain an account of the nature and extent of the different branches of manufacture in the empire, of the number of persons employed directly or indirectly, and the amount of capital at which they are assessed for the tax on industry:—

DESCRIPTION of FABRIC.	*Vienna.*	*Lower Austria.*	*Upper Austria.*	*Styria.*	*Carinthia and Carniola.*	*Illyrian Coast.*	*Tyrol.*	*Bohemia.*	*Moravia and Silesia.*	*Galicia.*	*Dalmatia.*	*Lombardy.*	*Venice.*	*Transylvania.*	*Military Frontier.*	TOTAL.
Silk spinning and weaving,	24	10	..	6	..	4	69	1	..	..	8	3735	1244	..	24	5119
Cotton and woollen spinning and weaving,	8	34	10	1	1	1	11	65	21	5	..	108	81	..	..	346
Flax and hemp spinning and weaving,	..	26	4	..	..	4	8	55	2	4	6	748	144	..	..	996
Cloth weaving,	..	1	2	..	1	..	..	10	35	3	..	17	73	5	..	147
Paper, paper hangings, and playing cards,	13	25	15	6	7	4	15	99	40	18	..	158	81	8	2	523
Leather and saddlery, &c.,	12	11	4	..	..	8	1	27	9	5	8	177	150	118	..	491
China and earthenware,	2	5	..	6	..	..	5	13	3	4	3	50	65	1	..	157
Glass and plate glass,	10	13	9	16	5	..	5	62	8	20	..	9	39	6	..	202
Iron foundries and works,	1	47	74	153	69	..	10	39	15	50	3	186	71	48	9	775
Copper mills and works,	..	4	6	7	8	..	1	3	..	12	5	18	86	3	1	154
Steel factories and other metals,	9	8	..	73	94	..	4	6	..	..	2	47	2	2	..	247
Brass & zinc, needles & buttons,	3	6	4	2	1	..	6	2	..	..	..	77	23	..	..	124
Sugar refineries,	6	3	..	1	1	1	1	5	12	17	..	4	4	1	..	46
Distilleries of spirits & liqueurs,	1	1	..	6	1	5	..	19	15	1233	27	65	109	25	..	1507
Colour-makers and chemists,	19	15	2	4	14	1	..	16	2	..	..	8	17	..	..	98
Wooden wares,	5	2	..	..	1	..	..	4	..	..	4	83	116	78	..	293
Sundry factories,	49	37	2	30	18	20	6	36	23	47	..	1450	769	135	5	2628
	162	237	132	312	221	48	142	462	185	1408	66	6940	3074	423	41	13,853

The following are included amongst the Miscellaneous Factories:—

28 of Chocolate.
95 of Vinegar.
10 of Honey and wax.
8 of Wax bleachers.
286 of Hats.
52 of Combs.
911 of Candles.
5 of Oil-cloth.
32 of Confectionary.
47 of Machines.
34 of Mathem. instruments.
56 of Coach-makers.
61 of Oil refiners.
9 of Soap-boilers.
32 of Sieve-makers.
14 of Sealing wax.
47 of Lace.
69 of Straw hats.

	Fabrics and Manufactories.		*Merchants and Dealers.*		*Working Tradesmen.*		INCREASE since 1829.		
	1829.	1837.	1829.	1837.	1829.	1837.	*Fabrics, &c.*	*Dealers, &c.*	*Tradesmen, &c.*
Lower Austria (with Vienna),	254	399	1,617	2,001	52,841	57,166	145	384	4,325
Upper Austria,	115	132	519	553	41,863	44,468	17	34	2,605
Styria,	207	312	394	416	30,368	31,096	105	22	728
Carinthia & Carniola,	149	221	265	326	24,554	25,665	72	61	1,111
Illyrian Coast,	22	48	154	190	6,218	6 802	26	36	584
Tyrol,	437	142	1,026	514	25,518	27,158	decrease 295	decrease 512	1,640
Bohemia,	335	462	2,726	2,998	110,897	123,631	127	272	12,734
Moravia and Silesia,	127	185	621	1,085	56,429	60,036	58	464	3.607
Galicia,	60	1,408	1,366	2,452	31,924	40,940	1,348	1,086	9,016
Dalmatia,	41	66	356	451	10,469	11.236	25	95	767
Lombardy,	2,668	6,940	3,705	9,702	90,091	98,053	4,272	5,997	7,962
Venice,	3,010	3,074	4,776	3,789	71,203	78,249	64	decrease 987	7,046
Hungary,	....	....	....	....	....	....	....	....	....
Transylvania,	1,469	423	470	894	32,126	44,243	decrease 1,046	423	12,117
Military Frontier,	393	41	840	907	18,829	19,995	decrease 352	66	1,166
	6,287	13,853	18,857	26,278	603,330	668,738	4,566	6,441	65,408

	Fabrics and Manufactures.	Bankers.	Merchants.	Shop and Store-keepers.	Working Tradesmen.	Special Occupations.	Total.	Apprentices, Labourers, &c.	Registered Capital in Florins.
City of Vienna, . . .	162	18	90	1,187	23,239	1,153	26,150	27,062	4,594,700
Austria below the Ens, . . .	237	..	..	705	33,927	1,374	36,243	29,687	2,519,800
Austria above the Ens, . . .	132	1	..	552	44,468	1,367	46,520	15,591	2,935,828
Styria, ...	312	3	2	411	31,096	1,186	33,010	10 688	1 978,890
Carinthia and Carniola, . . .	221	..	1	325	25,665	707	26,919	10,364	2,217,690
Illyrian Coast (exclusive of Trieste),	48	1	140	49	6,802	953	7,993	1,521	552,127
Tyrol, ...	142	3	1	510	27,158	1,786	29,600	7,218	5,411,000
Bohemia, ...	462	5	4	2,989	123,631	4,899	131,990	30,898	6,837,765
Moravia and Silesia, . . .	185	2	4	1,079	50,036	2,799	64,105	7,055	2,912,404
Galicia, ...	1,408	42	5	2,405	40,940	2,862	47,662	27,052	6,757,738
Dalmatia, ...	66	..	10	441	11,236	702	12,455	unknown	———
Lombardy, ...	6,940	73	288	9,341	98,053	30,140	144,835	160,892	75,011,055
Venice, ...	3,074	73	521	3,195	78,249	12,725	97,837	126,795	39,680,000
Transylvania, ...	423	4	1	889	44,243	2,167	47,727	unknown	———
Military Frontier, .	41	..	..	907	19,995	1,095	22,036	4,975	4.103,326
	13,853	225	1,068	24,985	668,738	66,215	775,084	459,798	155,482,323 £15,500,000

Note.—These tables, and the one on page 430, are taken from the *British and Foreign Review*, vol. xi., article "Austria and its Resources."

In her intercourse with foreign countries Austria experiences all the disadvantages of an inland position, and of a very limited access to the sea; to which must be added the obstructions arising from high protecting duties upon articles of foreign manufacture. The foreign trade is accordingly very limited, so far at least as appears from official statements; but the abundance of articles of English manufacture which are met with in the provincial towns, when compared with the moderate official returns, leaves no doubt of an extensive system of smuggling. Still the price of the most common articles of clothing is, throughout the empire, from 75 to 100 per cent. higher than in the shops of London; and the factories of metal, especially those which attempt any species of machinery, are overwhelmed with orders which they cannot execute to the satisfaction of their employers. The high profits which the protecting duties ensure to manufacturers, have led to numerous expedients for the removal of the difficulty, until all parties are at last convinced that without skilful labourers no undertakings of the kind can thrive; but these labourers are not easily found in a country whose population is thin, and whose natural resources of all kinds are so immense as to ensure almost boundless employment. The proper policy of the Austrian Government would seem to be to cultivate the natural resources of the country, and, at the same time, to remove all restrictions upon the interchange of their own productions for those, whether natural or manufactured, of other countries.

Internal Communication.—Great exertions have been made by the Imperial Government to facilitate communication between the different parts of the empire, and large sums of money have been expended upon this object. From Pavia, in Italy, to Czernowitz, in the Bukowine, a distance of 1120 miles, there is now a continuous line of macadamized roads. From Milan to Vienna there are three lines of these roads, and, in Galicia, two. Three great roads lead from Venice and two from Trieste to Tyrol and Germany; and two lines from each of those cities to Vienna. Prague is likewise connected with Vienna by several roads which are continued to the frontiers. More than sixty mountain passes have been made not merely practicable, but even commodious; and the roads over the Alps into Italy may be considered among the greatest works of the kind. Several railways have also been recently projected, and even to a considerable extent executed. The Ferdinand railway, 276 miles in length, commences in the Prater at Vienna, crosses both of the arms of the Danube, and proceeds to Gauserndorf, where the Presburg railway goes off to the right. At Lundenburg, in Moravia, the line divides into two branches, one of which goes to Brunn, along the Thaga and Schwarza; the other north-east to Silesia, with a branch of 16 miles from Prerau to Olmütz, crosses the Berzina, and proceeds up its valley to Weisskirchen, then enters the valley of the Oder, along which it extends to Ostrau, where a branch strikes off to Troppau. It then enters the valley of the Vistula, and proceeds to Dwary, Podgorze, and Cracow, where it takes a south-easterly direction, and terminates at Bochnia. The principal article of transport at this end of the line will be salt from the mines of Wieliczka. The estimated expense of the whole line is £1,200,000. In connection with it, a line is projected from Brunn to Prague; the Russian government have conceded a line from Cracow to Warsaw; the Prussian, a line through Silesia; and the States of Galicia, a line from Bochnia to Lemberg. A railroad, 166 miles in length, from Milan to Venice, is constructing with great rapidity. Baron Lina's railway extends from Vienna to Neustadt, and onward to Raab and Pesth, with branches to Modling, Laehsenburg and Baden. It then proceeds to Oedenburg, and south of the Neusiedler See to Raab. The estimated cost is £1.250,000, and it is expected to be opened in 1841. The Mittelbahn, or central railway extends from the Ferdinand railway at Gausendorf to Presburg, Komorn, Pesth, and Debretzin, crossing the Theiss by a very long bridge. The total length is 326 miles, and the estimated cost about £1,000,000.

A line has also been projected to connect Vienna with Trieste; but the difficulties of passing so many large rivers and lofty mountains are such as would involve an enormous outlay. A railway has been already constructed between Budweis in Bohemia and Lintz, from the latter of which places it proceeds to Gmunden, and is intended to be continued to Grätz in Styria. The length of the navigable channels of rivers within the empire is estimated to exceed 4000 miles, and of navigable canals, 831, but of the latter the principal lines, or indeed almost the whole of them, are in Hungary and Lombardy.

TOPOGRAPHY.—The German geographers divide all the countries, which form the empire, into four great districts, viz. 1. The German countries; 2. The Polish countries; 3. The Hungarian countries; and 4. The Italian countries. The German countries comprise Upper and Lower Austria, Styria, Carinthia and Carniola, Tyrol, Bohemia, Moravia and Silesia, and the Illyrian coast. The Polish countries comprise the kingdom of Galicia; the Hungarian countries comprehend Hungary, Transylvania, Military Frontier, and Dalmatia; and the Italian countries include the Lombardo-Venetian kingdom, subdivided into the two provinces of Lombardy and Venice. The first three we shall now describe in order; the last we shall reserve for their proper place in the description of Italy.

GERMAN PROVINCES.

§ 1. *Austria, Tyrol, Styria, and Illyria.*

These (with the exception of Salzburg, now included in Upper Austria, but formerly comprised in Bavaria, the Illyrian coast, and part of Istria, Friuli, and Montfalcone, formerly included in Italy) formed the late German CIRCLE OF AUSTRIA, which comprehended all the southern Alpine region of Germany, with the lower German portion of the basin of the Danube. They are divided, for administrative purposes, into governments and circles, as stated in the following table:—

I. GOVERNMENT OF LOWER AUSTRIA, OR AUSTRIA BELOW THE ENS.

Circles.	*Towns.*
Captainate of Vienna,	WIEN (VIENNA) 330,000.
Lower Wienerwald,	Traiskirchen, Baden, 3000; Neuhaus, Pottendorf, Kettenhof, Bruck, Klosterneuburg, 3000; Wiener-Neustadt, 8000; Laxemburg, Schoenbrunn, Haimburg, Schwœchat, 2000.
Upper Wienerwald,	Saint Poelten, 4300; Tuln, 2000; Baierisch-Waidhofen, 2000; Melk, 1000; Gottweih, Zell.
Lower Manhartsberg,	Korn-neuburg, 2000; Feldsberg; Laa; Stockerau.
Upper Manhartsberg,	Krems, Bœhmisch-Waidhofen, Weitra, Maria-taferl, Sieghards

II. GOVERNMENT OF UPPER AUSTRIA, OR AUSTRIA ABOVE THE ENS.

Muhl,	Lintz, 24,000; Freystadt, 2000; Mautbausen, Grein.
Inn,	Ried, Braunau, Scharding.
Haussruck,	Wels, Lambach, Engelszell.
Traun,	Steyer, 10,000; Ens, St. Florian, Kremsmunster, 2000; Gmunden, 1000; Ischl, Hallstadt.
Salzburg,	Salzburg, 14,000; Hallein, Radstadt, Hof-Gastein, Bad-Gastein, Krimml, Werfen.

III. GOVERNMENT OF TYROL.

Lower Innthal,	Innspruck, Schwaz, Hall, Steinach, Brixlegg, Kufstein, Zill.
Upper Innthal,	Imst, Nauders, Glurns, Reuti, Scharnitz.
Pusterthal,	Brunecken, Brixen, Sterzing, Lienz.
Etsch,	Botzen (Bolsano), Meran, Groeden, Clausen.
Trent,	Trent, Pergine, Worchen (Borgo di Valsugana), La Pieve.
Roveredo,	Rovereith (Roveredo), Riva, Avio, Ala, Arco.
Vorarlberg,	Bregenz, Feldkirch, Dornbirn, Bezau, Pludenz, Hohenems.

IV. GOVERNMENT OF STYRIA (STEYERMARK.)

Graetz,	Graetz (Niemetzki Grad), 50,000; Radkersburg, Feistritz, Furstenfeld.
Marburg,	Marburg, Pettau.
Cilly,	Cilly, Rohitsch, Toplitz-bei-Neuhaus.
Judenburg,	Judenburg, Admont, Aussee, Turrach, Schladming, Murau.
Bruck,	Bruck, Leoben, Eisenerz, 1400; Verdenberg, Mariazell, 800.

V. KINGDOM OF ILLYRIA, consisting of 1. THE GOVERNMENT OF LAYBACH, OR CARINTHIA and CARNIOLA; and 2. THE GOVERNMENT OF TRIEST, called also KÜSTENLAND (*i. e. Coastland* or *Shoreland*), comprising the ancient province of ISTRIA, with a portion of Carniola; the Austrian *Frioul*, and *Littoral*; and the Venetian provinces of *Istria* and *Montfalcone*.

1. GOVERNMENT OF LAYBACH.

Laybach,	Laybach, Bischoflack, Neumarkt, Krainburg.
Neustædtl,	Neustædtl (Novamestu), Gotteschee, Weichelburg, Gurkfeld.
Adelsberg,	Adelsberg, Cirknitz or Zirknitz, Ober-Laybach, Idria.
Villach,	Villach, Tarvis, Spital, Bleiberg, Malborget, Pontafell.
Clagenfurth,	Clagenfurth, St. Veil, Huttenberg, Ferlach, Wolfsberg.

2. GOVERNMENT OF TRIEST.

Triest,	Triest or Trieste.
Gorice,	Goerz or Gorice, Gradisca, Cormons, Montfalcone, Aquileia, Grado.
Istria,	Mitterburg or Pisino, Capo d'Istria, Pirano, Muggia, Isola, Citta-nova, Parenzo, Orsera, Dignano, Montona, Pola, Sevignaco, Promontore, Rovigno.

AUSTRIA, (*Oesterreich.*)—The archduchy of Austria consists of two nearly equal parts, distinguished as Upper and Lower Austria, and divided by the river Ens. Lower Austria, and in particular the fertile tract adjoining the Danube above and below Vienna, formed the nucleus of that union of States which now constitute the empire. This district contains the capital, and is besides the seat of extensive manufactures, consisting principally of woollens, cottons, and hardware, the yearly value of which, added to the less important fabrics of hardware, leather, glass, hats and paper, is computed at three or four millions sterling. In the mountainous part of the province are mines of iron, coal, and rock-salt; but the wealth derived from these is small when compared with that which arises from the agricultural products of the more level part of the country, particularly the valley of the Ens. Here wheat, barley, oats, &c., are raised in abundance; and, in the warmer situations, maize and vines are cultivated. The waters of the numerous streams that flow to the Danube are used for irrigation, and, besides, the produce has been greatly increased during the last half century by the use of marl; but is still much less than it would be under an improved system of agriculture. Upper Austria is too cold for the cultivation of the vine; but the low grounds are productive in corn: and in the more sheltered localities apple and other fruit trees are so abundant, that the province has acquired the designation of the garden of the empire. Rye and oats are raised in some of the valleys, and the culture of potatoes introduced by the Archduke John, is becoming every year more general; the pasturages are extensive, both on the hills and in the valleys. The sides of the mountains are covered with forests, the timber of which finds an outlet to a limited extent by the rivers, the principal of which are the Ens, the Salzach, the Traun, and the Trausen; one of the principal employments of the people in these districts being to fell the timber, and convey it to the rivers. The early inhabitants of Austria are understood to have come partly from Germany, and partly from among the Slavonic tribes of the north and east. High Dutch is now almost their only language; but it differs considerably from the language of Saxony. They are almost all Catholics.

TYROL is situate to the east of Switzerland, and to the south of Bavaria, and is traversed in every direction by mountains, many of which are of great elevation; while the low grounds consist, not of plains, but of a succession of long valleys to the number of more than twenty. In these the climate is comparatively warm, and the soil in many parts fertile, producing corn in considerable quantity, and, in favourable situations, vines. The agricultural implements are extremely rude; but the people show both ingenuity and industry in cultivating the slopes of the mountains wherever there is enough of soil to reward their labour. Waterfalls are numerous, and many of them are made available for moving mills and other machinery. Mineral ores are found to a considerable extent, but little progress has yet been made in working them. Manufactures are equally backward; the work of spinning, knitting, or weaving, being almost all performed by the hand. The domestic animals are in general of a diminutive size. The forests contain wolves, bears, goats, and many other wild animals, the pursuit of which affords excellent training for sportsmen, and their dexterity as sharpshooters, was frequently evinced in the late wars; but the Tyrolese, though of a warlike character, and attached to the house of Austria, dislike the restraints of discipline. They perform, however, militia duty, and are called out for training several weeks of the year. Their language is German. Like the other provinces they have their States or Parliament, composed of delegates from the clergy and nobility, to whom there have been recently added deputies from the peasantry.

STYRIA (*Steyermark.*)—Upper Styria is very mountainous; but in Lower Styria the ground becomes more level as it recedes from the Alps. There is a corresponding difference in temperature and products; the mountainous part being covered with forests, and fit only for pasture, while the plains and valleys produce wheat, barley, oats, rye, and, in the warmer places, maize. The culture of potatoes has also become general, and has added largely to the comforts of the population. The mines are extensive, particularly those of coal and iron. Salt is also obtained in great abundance. One half of the people are of German descent; the remainder are Wends or Slavonians. Both are Catholics.

CARINTHIA (*Kärnthen*) adjoins Tyrol, and, like it, consists of a succession of high mountains separated by narrow valleys, many of which contain lakes. Tillage is here practised on a very limited scale; but the pastures are extensive, and the forests which cover the sides of the mountains would be very valuable were it practicable to convey the timber to a navigable river. The province likewise contains mines of iron, lead, and quicksilver. CARNIOLA (*Krain*), the adjacent province, though mountainous in the north, has extensive valleys and fertile plains in the south. The agricultural products are not merely wheat, rye, and barley, as in Carinthia, but also maize and vines, the sure indications of a warmer sun. There are also a number of mines of iron, lead, and quicksilver. Only about a tenth part of the people are Germans; all the rest are Slavonians, and generally poor. The calcareous mountains of Carinthia and Carniola abound in caverns, more than a thousand of which are said to have been noticed in a region of no great extent to the eastward of Hagerfurth.

The ILLYRIAN COAST (or KÜSTENLAND,) consists chiefly of the large peninsula of Istria, with a small portion of adjoining territory. The surface towards the sea is in some places low and marshy, in others covered with mountains, some of which are bare and rocky, while the rest are clothed with luxuriant forests. The soil in some of the valleys is fertile, and affords abundant crops of grain; and in many places excellent wines, but in other parts it is thin and poor. The fig, the mulberry, and even the olive thrive in the country round Trieste; and in the valleys the people devote themselves to the rearing of silkworms. The whole country seems to be composed chiefly of limestone. The peninsula consists entirely of hills, over and around which excellent roads are carried, with a degree of science and expense greatly creditable to the government. Pleasing and interesting views occur at every turn; and the surface, except in the district near Monte Maggiore, on the east coast, is covered with verdure. The hills, with one exception, are rarely above 2000 feet high, but are heaped together in a strange and fantastic manner, with the most singular and continually varying forms, exhibiting everywhere the most picturesque landscape.

§ CITIES AND TOWNS.

WIEN (VIENNA) the capital of Austria, and of the whole empire, is situate on an arm of the Danube to the south of the main stream, at the mouth of the rivulet Wien, about 400 feet above the level of the sea. The city properly so called is very small, consisting, in 1827, of only 1227 houses, while the suburbs contained 7415. The strong fortifications which formerly surrounded the city, have been converted into a public promenade called the Bastey, which forms a fine terrace, from 50 to 70 feet high above the fosse, now also converted into gardens. Outside and on a lower level than the Bastey, the walls are surrounded by a wide esplanade, called the Glacis, rising gradually into eminences, upon which the thirty-four suburbs

(Vorstädte) are built. These are completely separated from the city by the glacis, which has been laid out with delightful walks, and affords in the very midst of the town every facility for air and exercise to the inhabitants. The external circuit of the suburbs is about 14 English miles. Like those of all other old towns, the streets of the city are narrow, the squares small, and the houses lofty. The suburbs are not so splendidly built, but their more elevated situation, wide, regular streets, and the lower height of the houses, render them a preferable residence, though the citizens, who consider it fashionable to reside in the city, do not think so; even a tradesman resident there holds a higher rank than his brethren in the suburbs. Within this narrow circuit, which may be walked round in fifty minutes, is contained almost every object of interest or importance: — the palace, offices of government, the residences of the higher classes, the best shops, most of the public museums, libraries, and galleries, and, with one exception, all the good hotels. Among the numerous public buildings which adorn Vienna, the following are the principal: — The *Kaiser-Burg*, or imperial palace, an immense building, of irregular form, but presenting nevertheless many portions remarkable for their magnificence, and for the beauty of their architecture; *St. Stephen's Church*, a vast gothic fabric, with a lofty steeple, one of the highest in Europe, being 420 or 434 feet high, and ascended by 753 steps; *St. Peter's Church*, built on the plan of St. Peter's at Rome; the church of the Augustines, remarkable for its extent, and for the mausoleum of the Archduchess Christina, the work of Canova; the church of the Capuchins, the crypt of which contains the burial vault of the imperial Austrian family; the church of St. Rupert, remarkable for its antiquity, having been built in A. D. 740, and restored in 1436, and again in 1703; the church of St. Carlo Borromeo in the suburb Wieder; the various palaces and offices of the imperial government and ministers; and of the great nobility of the empire. Besides the Bastey and the Glacis, already mentioned, Vienna possesses other public walks, viz. the Prater, upon an island formed by the branches of the Danube, an immense park planted with oaks and beeches, and the great resort of the citizens of all classes; the Augarten, a similar park in the same island; the Brigitten-au, crowded on St. Bridget's day; and the Volksgarten, between the palace and the city wall, all of which are open to the public. In the last there is a small but elegant temple, on the model of that of Theseus at Athens, built to contain the statue of Theseus by Canova. There are likewise several open places or squares within the city, the finest of which is the Josephs-platz, so called from its being ornamented with a fine equestrian statue of the Emperor Joseph II., and several fine gates.

Vienna is most liberally provided with scientific institutions and charitable establishments. The University, founded A. D. 1237, possesses an astronomical observatory, an anatomical theatre and laboratory, a good library, a collection of natural history, a botanic garden, and 42 professors. The Gymmasium is equally well appointed; and in the Commercial Academy, pupils are instructed not only in the usual routine of education, but also in the science and the history of commerce, the knowledge of merchandize and mercantile law, the products and advantages of all the commercial states in the world; those objects of natural history which furnish material for commerce and manufactures; chemistry as applied to the useful arts; correspondence on all kinds of business; drawing, machinery, mathematics, &c.; for all which the pupils pay only three florins (six shillings) a month; and for a small additional sum they are taught the Latin, English, French, and Italian languages. The Oriental Academy was founded by the Emperor Joseph I., and is unique of its kind. Here young men are instructed in the oriental languages, and also in the political relations of Austria with the eastern nations; and when their studies are finished, they are employed as secretaries to ambassadors, consuls, or other agents of government in the East. This excellent institution has furnished some of the most distinguished men in the recent political history of Austria. The Teresian Academy was founded by the Empress Queen, Maria Teresa, solely for the education of the sons of the aristocracy; but her philosophic son, thinking they would be better fitted to perform the duties of good citizens, if educated in a school of a more mixed character, suppressed it, and distributed the revenues in stipends to meritorious civil and military officers. His nephew, however, the late Emperor Francis I., re-established it on the original plan. The Medico-chirurgical Academy, founded by Joseph II., is one of the finest buildings in Vienna, and has accommodation for 1200 patients. There are six professors, and the collection of anatomical figures in wax, by Fontana, is little inferior to that of Florence. The general hospital for the sick was also founded by the same benevolent and enlightened monarch. It contains 111 rooms, with 2000 beds, and is computed to receive annually about 10,000 patients. Adjoining to this is the lying-in hospital,

another monument of Joseph's benevolence. There is also a foundling hospital, and many other charitable institutions, which reflect the highest honour on the founders, and on the liberality of the government which supports them.

Besides a very large collection of valuable works of art, the Imperial palace also contains the Hof-bibliotheek (Imperial library), a temple worthy of the intellectual treasures it enshrines. It contains upwards of 420,000 volumes, with a large collection of valuable manuscripts.* The ancient palace of Prince Eugene, called the Belvedere, was converted into a museum of the fine arts by Joseph II., to whose munificence and good taste Vienna is thus indebted for one of the best collections of paintings in Europe, particularly rich in the works of the Flemish and the German schools. The ground floor of the Belvedere contains a fine collection of ancient armour, and a large number of portraits of the most distinguished persons connected with the house of Hapsburg. The arsenal likewise contains a collection of armour ingeniously arranged; and in the city arsenal, besides sufficient arms for 30,000 men, and a proportionate amount of artillery, there is an immense collection of Turkish trophies, including the head of the Grand Vizier, Kara Mustapha, who commanded the Turks at the siege of Vienna in 1683. Vienna is indeed well calculated to afford gratification to the antiquarian and the admirer of the fine arts; for, besides the imperial and public collections, every nobleman has his separate gallery; and all are of easy access.

Vienna is divided into eight districts, to each of which a physician, a surgeon, an apothecary, and an accoucheur, are appointed and paid by the government; and their duty is to furnish the necessitous sick at their own houses, with advice and medicines gratis. These functionaries are the guardians of the public health, and make a daily report to the police of the births and deaths; and to guard against secret crime, the proprietors of houses are obliged to announce to them the death of any of their inmates, and no person can be interred without producing this certificate. In short, their surveillance, in conjunction with that of the police, is extended to the minutest circumstances that can affect the public health. Indeed, in what may be termed compulsory cleanliness, Vienna might serve as a model to every other town. No dirt of any kind is permitted to be thrown into the streets; no accumulated mass of decaying vegetables is ever to be seen in the markets; and no slaughter-houses are to be found throughout the city. Putrifying provisions are never allowed to be sold, nor adulterated bread; the bread is not only weighed, but chemically analysed, if suspected to contain improper ingredients, and the offender subjected to a ruinous fine. The police also regulate the markets, and the price of provisions. Yet, notwithstanding all this care, Vienna is decidedly unhealthy, and the climate is generally fatal to delicate constitutions; colds, catarrhs, and pulmonary complaints being frequent, and very malignant. This insalubrity arises from its peculiar situation; for it is exposed to the frequent prevalence of easterly winds, which, blowing over the cold plains of Russia and Poland, the icy tops of the Carpathians, and the waters and marshes of the Danube, increase in coldness and dampness till they reach Vienna. The city is equally exposed to the north wind, while from the balmier influence of the south and the west it is excluded by a neighbouring chain of mountains, behind which rise the everlasting snows of the Tyrolese and Carnic Alps. Alternations from heat to cold, and from cold to heat, occur two or three times a-day, almost throughout the year. The narrow streets exclude the rays of the sun; and in dry weather the clouds of dust are intolerable. The mean winter temperature is 7° to 9° minus of Reaumur. But though unfortunate in respect of salubrity, Vienna is highly favoured in beautiful distant environs, which offer numberless interesting excursions to the citizens and the traveller. The country, however, for several miles round Vienna is dreary and devoid of interest; and the roads immediately beyond the gates of the suburbs are worse than those around any other capital in Europe. The population of the city and suburbs amounted, in 1837, to 333,582, exclusive of the garrison and strangers; including these, the total might be 345,000.

Vienna is likewise the most important manufacturing town in the empire; more than 60,000 persons find employment in different branches of industry. The manufactures consist of silk and other stuffs, gold and silver lace, ribbons, hardware goods, needles, philosophical instruments, and paper. The carriages of Vienna are prized in most parts of Germany; there are also several porcelain works, one of which employs 150 painters and 1500 workmen. The principal other articles made

* In 1839, the number of printed books was 425,621 volumes; and of manuscripts, 17,236.

in the city are: — steel ornaments, jewels, watches, musical instruments, and chemical products. There are also a cannon foundry, and a manufactory of arms, supported by Government. The capital is thus the centre of Austrian commerce, and of the circulation required to maintain it. The produce of its industry gives rise to an exportation sufficient to employ 6000 boats, and nearly 2,000,000 waggons. The canal of Neustadt, finished in 1803, serves as a communication between the Danube and the metropolis; boats ascend by means of locks to the basin in front of the town-house. Three fairs are held in the town, and the number of mercantile houses of every kind amounts to a thousand.

Notwithstanding the disadvantages of climate and situation, few places possess such ample resources, and such general means of enjoyment, both intellectual and physical, as this imperial city. Its magnificent public library, scarcely inferior to any in Europe, and its admirable scientific museums, are all open to the public, in a manner so perfect as to arrangements and accommodations as to render them practically and generally useful. The theatres, the opera, the restaurateurs, are all excellent. The streets are crowded with a lively, active, bustling population. Nothing occurs either to annoy or to molest; and in no capital in continental Europe does the stranger whose passports are regular and his conduct orderly, experience or perceive so little of the interference of the police as at Vienna. No beggars are to be seen; no appearance of poverty meets the eye; and no one appears badly dressed; the Viennese are indeed a happy and joyous people. Frugal, cheerful, and contented, they desire no alteration in their condition; they know little of their government but its mild and paternal influences; and they dread change of any kind as fraught with evil. They see their princes mixing among them with all the simplicity and kindliness of private citizens; and they love them with an affection which they believe to be reciprocal. Their general tone of character forms them for tranquil enjoyment in themselves, and for promoting it in others: and the lower classes, as well as the higher, are generally found to be mild, kind, and obliging.—*Turnbull's Austria*, i. 219, &c.

Vienna has been the scene of many historical events. In 1241, it was taken by the Emperor Frederick II. and again by Rudolph I. in 1297. It was vainly besieged by the Hungarians in 1477; but obliged to surrender eight years afterwards to Matthias, King of Hungary and Bohemia. In 1683, it was again besieged and closely invested by a numerous army of Turks, under the Grand Vizier, Kara Mustapha, and relieved at last only by the arrival of a Polish army, under their King, John Sobieski, who defeated the Turks with great slaughter, under the very walls of the city. In 1805, it surrendered to the Emperor Napoleon; and again in 1809, after a short resistance. Six miles east of the city is the island of *Lobau*, in the Danube, where the French were encamped for six weeks; and opposite it, near the north bank of the river, are the villages of *Aspern*, *Essling*, and *Wagram*, where the desperate battles were fought which decided at that time the fate of the Austrian monarchy.

In the neighbourhood of the city are several other interesting places, as: — *Schönbrun* (Beautiful spring), a palace built by the Empress Maria Tercsa, remarkable for the extent of the buildings, the beauty of the gardens, and the profusion of rare and valuable plants in the conservatories; *Lachsenburg*, or *Laxenburg*, a gothic castle belonging to the Emperor, and considered one of the greatest curiosities in Germany; the village of *Maria-Hitzing*, near Schönbrun, which has been considered the finest and most picturesque in Austria, and possesses a theatre and baths; *Penzing*, noted for its ri bon manufactories; *Meidling*, famous for its mineral waters; *Baden*, a fine town, with about 3000 inhabitants, but frequented annually by 4000 or 5000 strangers, to drink its waters; and near Baden, *Weilburg*, a magnificent palace recently built by the Archduke Charles.

In Lower Austria. — *Neustadt*, an ancient town, 27 miles S. of Vienna, is considered the finest in the archduchy. It contains 8000 inhabitants, who are employed in numerous flourishing works and manufactures, and communicates with the city by a canal 40 miles in length, which makes it the entrepôt of the iron manufactures of Styria. It is also noted for a Cistertian abbey, and a military school, in which 400 pupils are educated, besides private boarders.. *Bruck*, on the Leitha, 23 miles S.E. by E. of Vienna, is noted for its manufacture of English spinning machines, and for the fine castle of the Count of Harrach, whose botanic garden is considered the finest in the Austrian empire. *Schwöchat*, and *Haimburg*, in the same neighbourhood, are also noted for their manufactures. *Kloster-neuburg*, 7 miles N.W. of Vienna, has a population of 3000, and is noted for a great literary establishment in the magnificent convent of the Augustines. *Tuln*, on the Danube, 20 miles N.W., is noted for Roman antiquities; and *Korn-neuburg*, on the north side of the river, nearly opposite Kloster-neuburg, for its school of arts and trades. *Diernstein*, or *Durrinstein*, on the north bank of the Danube, 42 miles W.N.W. of Vienna, contains the castle of Löwenherz (Lion-heart), where Richard Cœur de Lion, King of England, was kept a prisoner by the Duke of Austria. *St. Poelten*, 35 miles W. of Vienna, upon the Trasen, is a fine episcopal town with 4300 inhabitants. *Baierisch (Bavarian) Waidhofen*, 75 miles W., noted for iron works; *Mölk*, or *Melk*, 50 miles W., has a magnificent Benedictine convent, to which are annexed a college, a gymnasium, a botanic garden, and fine scientific collections. It crowns an isolated ridge of granite, rising 180 feet above the Danube, which flows at its base. *Mariataferl* is noted as a place of pilgrimage for the devout worshippers of our Lady, the Virgin, Mother of God.

In Upper Austria. — LINZ (LINTZ), the capital, on the south bank of the Danube, 97 miles W. of Vienna, is a well-built episcopal city, with a lyceum, a gymnasium, a great cloth work, and other manufactories. It contains 24,000 inhabitants, is a place of some strength, and communicates with Budweis in Bohemia by a railway. *Steyer*, on the Ens, 20 miles S.E. of Linz, is a large town of

10,000 inhabitants, employed in the manufacture of all sorts of iron and steel instruments, which have a great sale, on account of their excellent quality and their cheapness. *Gmund*, or *Gmunden*, at the northern end of the Lake of Traun, 35 miles S.W. of Lintz, is noted for rich salt works, and is connected with Lintz by a railway, which is to be extended to Grätz.—Population, 1000. *Kremsmunster*, 20 miles S. of Lintz, is noted for its monastery, one of the finest in Europe, and for its important literary and scientific establishments, of which the lyceum, the observatory, and the library, are the principal.—Population, 2000. *Ischl*, or *Ischel*, and *Hallstadt*, small towns noted for salt works. Ischel has a permanent population of 2000, many of whom are disfigured by enormous goitres. SALZBURG, 70 miles W.S.W. of Lintz, is a well built, but dull and gloomy city, with 14,000 inhabitants, built in a fine amphitheatric valley, on both banks of the Salzach, and was recently the capital of a sovereign archbishop. It is noted for the industry of its inhabitants, and contains two public libraries, some literary and scientific institutions, and a number of monasteries. Its gigantic citadel is situate on a lofty calcareous rock in the very heart of the city. In the vicinity are:—*Leopoldskron*, a pleasure-house with a fine picture-gallery; and *Hellbrun-hohen-Ems*, with a fine garden, fountains, and a theatre excavated in the rock. *Hallein*, 9 miles S., a considerable town, with 5000 inhabitants, noted for its rich salt mines, in the bosom of the Durrenberg; and 7 miles farther S.E. is *Golling*, near which is the fine waterfall of *Schwarbach*, formed by the Salzach. About 50 miles S. of Salzburg, midway between the Salzach and the Drave, and on the highest pinnacle of one of the ranges of mountains which slope down towards the valley of the Salzach, is situate *Bad-Gastein (Gastein bath)*, nearly 3000 feet above the level of the sea. The baths are supplied from four principal springs, of the temperature of 115°, 116°, 117°, and 118° Fahrenheit. About 100,000 cubic feet of hot water are discharged every 24 hours, and the principal mineral ingredient appears to be sulphate of soda, or glauber salt; but the water is clear and almost tasteless.* Some miles north of the bath is *Hof-Gastein*, a small town, where visitors are accommodated. Near Gastein, the river Aache forms the highest cataract in Europe, dashing down many hundred feet between two almost vertical mountains. *Berchtesgaden*, 12 miles S. by W. of Salzburg, is an ancient and picturesque town, to the south of which, embosomed in lofty mountains, is the romantic Lake of the *Konigsee*, 5 miles long by 2 wide; but these are both situate in a projecting enclave of Bavaria.

In Tyrol.—INNSBRUCK (INNSPRUCK), the capital, is a large town on the Inn, 60 miles S. of Munich, in the midst of a valley surrounded by lofty mountains, which are covered with snow even in May and June. It contains a University which was re-established in 1826; the museum Ferdinandeum, with fine collections of natural history, antiquities, and the fine arts, and several other scientific and literary establishments. The palace, the court church, which contains the tombs of twenty-eight distinguished persons, and a fine monument of the Emperor Maximilian; and a large and spacious town-house, are the only buildings worth notice.—Population, 11,000. In the vicinity is the castle of *Ambras*, which contains an arsenal, where are preserved the armour of several celebrated princes and warriors, a museum, a library, and a picture-gallery. *Hall*, 6 miles E., is noted for saltworks, and contains a mint, a gymnasium, and 5000 inhabitants. *Schwaz*, also on the Inn, further east, is noted for silver and copper mines, and a remarkable bridge, and has 8000 inhabitants. *Bregenz*, a small town, beautifully situate at the east end of the Boden See. *Trent*, a small city on the Adige, contains a lyceum, a philosophical institute, a gymnasium, an episcopal castle, with fine gardens, several silk manufactories, and 12,000 inhabitants. In its church of St. Mary the Great, the celebrated Council held its sittings between 1545 and 1563. *Roveredo*, 14 miles S. of Trent, a small commercial town, with 7000 inhabitants. *Brixen*, 53 miles N.E. of Trent, and 40 S.E. of Innspruck, is a small episcopal city, with only 3200 inhabitants, but one of the most important military points in Tyrol, and has lately been, or is in the process of being strongly fortified. *Botzen*, or *Bolsano*, between Brixen and Trent, is noted for its industry and its fairs, and has 8000 inhabitants. In the circle of Botzen is the valley of *Groden*, the people of which are employed in the making of various sorts of carved woodworks, which are carried to every country of Europe, and even to America; and in the circle of Pusterthal, is the valley of Tofferegg, where the fine Tyrol carpets are made.

In Styria.—GRÄTZ (NIEMETZKI-GRAD of the Slavonians), is a well-built city, in the middle of a fertile plain, on the banks of the Muhr, 90 miles S.W. by S. of Vienna. It is the capital of Styria, the ordinary residence of the Bishop of Seckau, and of the general commanding in Styria, Carinthia, Carniola, and Tyrol. It possesses several remarkable buildings, as the imperial castle, the cathedral, and the Johanneum, so named from its founder, the Archduke John. The last is a sort of college or university, having several professors, and contains fine collections of objects of natural history and the arts, a rich library, and a good botanic garden. There is, besides, a university founded in 1826, and several other scientific and literary institutions. Grätz is one of the principal inland trading towns in the empire, and contains about 50,000 inhabitants. Its fortifications have been demolished, and converted into fine walks. The climate is cold in winter, and very changeable throughout the year. *Eisenerz*, a small town of 1400 inhabitants, 42 miles N.W. by N. of Grätz, noted for inexhaustible mines of rich iron ore, which have been wrought since the time of the Romans, and produce the best steel in Europe. The ore is dug from the bowels of the Eisenberg, on the top of which a colossal iron cross has been lately erected. Five or six miles S.E. of Eisenerz, is *Vordenberg*, the usual residence of the scientific Archduke John, disfigured by the number of forges, but situate in a pleasing country. *Leoben*, a handsome town in the same circle, noted for the peace concluded there between the Austrians and French in 1797. *Zell*, or *Mariazell*, a village 60 miles S.W. by W. of Vienna, and 2200 feet above the level of the sea, noted for its forges, and a magnificent church, the Loretto of the Austrian empire, to which several thousand pilgrims resort every year, for the purpose of worshipping the Virgin Mary, who is there represented by a small wooden image, 18 inches high, with her child on her knee, both arrayed in gorgeous apparel, and with crowns of sparkling diamonds on their heads. In the vicinity is a great imperial foundry, which is supplied with iron ore from a mine seven or eight miles distant, which yields 35 per cent. of pure metal. Every sort of casting is executed, from the largest cannon, to the finest and most delicate ornamental work. *Bruck*, the chief town of the circle, is small, its inhabitants are employed in working slate quarries and mines. The road from Bruck to Vienna passes over a limestone ridge, 3120 feet above the level of the sea. *Judenburg*, on the Muhr, above Leoben, is a small town, nearly destroyed by fire in 1807, and scarcely recovered. *Marburg*, picturesquely situate on the Drave, with 5000 inhabitants, is the capital of a circle, 35 miles S. of Grätz. *Pettau*, a small town of 1700 inhabitants, on the Drave, below Marburg, is considered the most ancient town in Styria. *Radkersburg*, a small fortified place on an island in the Muhr, N.E. of Marburg. *Luttenburg*, in the valley of the Muhr, N.E. of Pettau, is famous for its wines. *Cilly*, or *Cilli*, on an affluent of the Save, is a very ancient town, with a castle, in which many valuable antiquities are preserved. *Rann*, a small fortified town, with ruinous walls, at the south-

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* *Dr. Granville's Spas of Germany*, I. 311, &c. Mr. Turnbull, however, says that the mineral waters of Gastein "rise from *six* sources in the granite rock, at a temperature varying from 112° to 122° of Fahrenheit," and "appear to contain in 16 ounzes of water only 2 grains and 7-10ths of ponderable matter, composed of twelve different ingredients, and with no gaseous contents whatever."—*Turnbull's Austria*, vol. ii. p. 155. London, 1840.

east corner of Styria. *Voitzberg*, a small town, W. of Grätz, in a valley surrounded by mountains, and inhabited by an industrious population, who are employed in iron-works, rail-making, paper-mills, and brick-making. The inhabitants export coal, whet-stones which are much prized, and draught horses. *Aussee*, a small town, 13 miles S. of the Lake of Traun, in a romantic valley, with two lakes, the Alt-Aussee and the Grundel. *Admont*, in the same circle, a small rural town, 2300 feet above the level of the sea, and surrounded by mountains from five to seven thousand feet higher, contains a far-famed Benedictine abbey, with a rich library of 70,000 volumes.

In Carniola.—LAYBACH, or LAIBACH, the capital of the new kingdom of Illyria, is a pretty episcopal city, with several public works, a considerable transit trade, and 12,000 inhabitants. *Idria*, 30 miles N.E. of Trieste, has 5000 inhabitants, and is noted for its rich mine of quicksilver. The hills in this part of Carniola are composed chiefly of transition limestone; that which contains the mine is of this rock, alternating with clayslate, in which the quicksilver is found. It exists partly in a native state, embedded in globules in the slate; but is found in much greater abundance in combination with sulphur, forming veins of cinnabar, which vary exceedingly in thickness. The richest ore yields from 50 even to 70 per cent., the remainder being chiefly sulphur with a little clay earth. The descent into the mine is remarkably easy, and is made by flights of stone steps, leading to several successive levels. The greatest depth at present is 130 klafters, or 980 Vienna feet, of nearly 13 English inches each. The annual produce is from 315 to 350 tons, of which the native quicksilver forms only from 100 to 130, the rest is all derived from the cinnabar. A small part of it goes to Trieste, whence it is exported chiefly to America; but by far the largest proportion is sent to Vienna, partly for the plating of mirrors, but principally for the use of the gold and silver mines of Hungary and Transylvania. Between 600 and 700 men, all free labourers, are now employed, of whom about 500 work in the mine, where they are engaged only about eight hours a-day.* *Adelsberg*, a small town of 1400 inhabitants, 24 miles E.N.E. of Trieste, is noted for caverns which contain great quantities of fossil bones, and one of them a subterraneous river, which produces that singular animal the *proteus anguineus;* and in a valley further east is the curious lake of *Zirknitz*, which varies in size from four or five to seven or eight leagues in circumference, and sometimes entirely disappears, leaving its bed dry. *Gurkfeld*, with 2200 inhabitants, on a hill covered with vineyards, on the banks of the Save. *Neustaedtl*, the capital of a circle, is a small town, frequented by the visitors to the baths of Töplitz, near Cilly.

In Carinthia.—CLAGENFURTH, the capital, is a fine city, with 10,000 inhabitants, the seat of the Bishop of Gurk, and of a tribunal of appeal for the governments of Styria and Laybach. The inhabitants manufacture silk and cloth, and carry on a considerable transit trade. *Villach*, an ancient town noted for white marble quarries, 25 miles W. of Clagenfurth. *Bleiberg*, to the westward of Villach, is noted for lead-mines, which are considered among the richest in Europe.—Population of the district, 4000. *Huttenberg*, noted for rich iron mines. *Ferlach*, a village of 3000 inhabitants, noted for its great manufacture of fusils. *St. Veil*, north of Clagenfurth, formerly the capital, and now the general entrepôt of the iron of Carinthia.—Population, 1400.

In the Government of Trieste.—TRIEST or TRIESTE, situate at the south-east corner of the gulf to which it gives its name, at the head of the Adriatic Sea, is a most important commercial town. The old town is irregular, but the new town, called also *Theresienstadt*, is much larger and is well laid out, with straight and well paved streets, and good houses. The exchange and the new theatre are fine buildings. Trieste is a free port; and contains a royal school of navigation, with thirteen professors, a Jewish high school, a public library, a magnificent lazzaretto, and other institutions.—Population in 1836, 69,522; besides the troops in garrison, 2000; seamen, 2000; and non-resident strangers, 1000. Great efforts have been lately made to extend the harbour, and to render it of easy entrance to ships; ship-building is carried on to a considerable extent; also soap-works, rope-works, and sugar-refineries. The town is surrounded by gardens, delightful vineyards, and elegant villas; and at no great distance by a range of limestone hills, over which the great road into the interior is carried by a continued zig-zag ascent of five miles. The origin of Trieste is lost in the most remote antiquity; but, with many changes of fortune, it remained comparatively poor and insignificant till the year 1719, when the Emperor Charles VI. made it a free port, and invited foreigners to settle in it. From that time its trade has been progressively increasing, and it is now one of the most important marts in the Mediterranean. In 1836, the total number of vessels that arrived at Trieste was 8489, with a tonnage of 422,743; and, of that number of ships, 1095 were engaged in foreign trade, with a tonnage of 215,987. The total value of the imports in that year was £6,315,390 sterling, and of the exports, £4,536,245. The imports consist of colonial produce, and manufactured goods from the different countries of both Europe and America; but a great part of the amount, especially of colonial articles, is reshipped to Venice for the consumption of Lombardy; but as neither these, nor the articles shipped in small craft for Austrian ports in the Adriatic or for Ancona, are properly considered as exports, the imports necessarily much exceed the exports. The exports consist of the raw produce of the Austrian States, as grain, chiefly wheat and maize, rice, wine, oil, honey, wax, shumac, tobacco, dried fruits, rosolio, and liqueurs; silk, silk rags, and waste, hemp, wool, flax, linen rags, hides, furs, skins; quicksilver, cinnabar, iron, lead, copper, brass, litharge, argol, antimony, arsenic, alum, vitriol, turpentine, pitch, potash, and marble; timber for shipbuilding and other purposes, such as oak, larch, pine, fir, walnut, beech, cork, box, cherry, laurel, and rosewood; masts, spars, planks, boards, beams, rafters, oars, staves, hoops, sieves; the manufactured goods of the Austrian provinces; colonial, Levantine, and other foreign produce imported *in transitu*. The following articles are prohibited from being imported except for re-exportation:—Unwrought iron and steel, copper, quicksilver and mirrors; tobacco, salt, saltpetre, and gunpowder. The last four articles are government monopolies, and may be imported for sale to government, or to the farmers of the monopolies, by special licence only; the prohibited articles are, on arrival, placed under the keys of the custom-house officers; but, notwithstanding all the vigilance which is employed, a good deal of smuggling is carried on.† Within the last four years Trieste has been very much improved; and during the summer of 1839, many old houses were demolished, and new streets built; the city, and its district of about 35 English miles, at the end of that year, contained 4240 houses, and 75,551 inhabitants; and the revenues of the town exceeded £100,000, whereof the half consisted of a tax on wine. Trieste, however, has no natural harbour; but art has in some degree supplied the want by two great works, executed in the reign of Maria Teresa. The first of these is the great canal, which penetrates the city to the extent of 1200 feet, and 110 wide, in which vessels not drawing more than 10 or 11 feet of water may lie securely, and take in or discharge their cargoes in the very centre of the town, and opposite the great ranges of stores which line the quays. The other is the Theresian mole, a mass of regular masonry, about 2200 feet long, and 60 wide, carried along a projecting ridge of low half-sunken rocks, and terminating with an irregular platform, about 1100 feet in circuit, on which are erected a fortress and a lighthouse.

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* *Turnbull's Austria*, vol. i. ch. 11.

† Report on the Statistics of Tuscany, Lucca, the Pontifical, and the Lombardo-Venetian States; with a special reference to their commercial relations. By John Bowring. Presented to both Houses of Parliament by command of Her Majesty. London, 1837.

Within this mole vessels can lie in deep water, with perfect security; but the distance from the stores renders it somewhat inconvenient; and the space is so limited, that it cannot contain more than 40 or 50 vessels of 300 or 350 tons. All other vessels must lie in the roadstead in front of the city. (*Turnbull's Austria*, I. 362.) There are in Trieste two institutions that have proved of the greatest importance in a commercial point of view, the Exchange and the Austrian Lloyd. The Exchange forms a central point of union for the whole commercial public; it is under the charge of six deputies, who are elected for three years, and each of whom undertakes the administration for six months; but the whole body of members choose a consulta or committee of forty, to whom the deputies may submit important matters for deliberation. Only wholesale dealers can become members; each pays 40 florins of entry-money, and a yearly subscription to the same amount. The Austrian Lloyd originated in 1833, and is divided into two principal sections, the one of which employs itself in collecting every kind of useful information respecting trade and navigation, and the other forms a steam navigation company. Each member pays a subscription of 30 florins annually. The citizens have no choice in the election of their magistrates, who are appointed by the Imperial Government; but, since 1838, a corporation has been established to participate in the management of the public funds, and to give its opinion on matters of public interest. It consists of forty members selected by government from lists proposed by the citizens, and is divided into two portions, named the Great and the Little Councils. The Great Council of forty, chooses ten of its own members to form the Little Council, who continue in office one year, and meet whenever the magistrates deem it expedient to call them together. The Great Council meets once a-year, to elect the Little Council, to audit the accounts of the preceding year, to deliberate on the ways and means of the year ensuing, to suggest measures likely to promote the welfare of the town, and to give an opinion on such matters as may be submitted to their consideration.—*Raumer's Italy and the Italians*, I. 54.

In the vicinity of Trieste are:—*Zaule* and *Servola*, two small villages, with important salt works; *Basovizza*, noted for the *grotto of Corgnal*, considered one of the finest in the empire; *Lipassa*, a very small village, with a fine stud belonging to the Emperor; *Muggia*, a miserable place, with 1100 inhabitants, and saltworks, considered to be the most ancient town of Istria; *Capo d'Istria*, an ancient built town with 5000 inhabitants, a gymnasium, a college, and large saltworks; it is built in the Venetian style on a large circular island, which is connected with the shore by an artificial causeway, constructed by the French; *Pirano*, a town of 6200 inhabitants, noted for oil, fisheries, and the immense salines of *Sizziole* in the neighbourhood, situate at the bottom of the magnificent port called *Delle Rose* or *Porto Glorioso*, large enough to receive 200 ships of the line. Upon the southern point of this vast basin is one of the finest lighthouses in Europe. Between Pirano and Capo d'Istria is *Isola*, a small town of 2800 inhabitants, upon a peninsula. *Gorice*, or *Goerz*, 25 miles N.W. of Trieste, an archiespiscopal city, with 9000 inhabitants, silk-works, tanneries, bleachfields, &c.; and near it *Monte Santo*, noted for excellent wine. South-west of Goerz are *Aquileia*, a very ancient and celebrated, but now very small town, with only 1400 inhabitants; *Grado*, the port of Aquilcia, a small town on an island, with 2000 inhabitants; *Marano*, a small but strong castle, in the lagune of Grado, with 1000 inhabitants, mostly fishermen; and *Gradisca*, a fortified town on the Lisonza, with only 800 inhabitants. Grado was the residence of the Patriarch of Venice till A.D. 1451, when his reverence removed to Venice. *Montfalcone* and *Duino*, two small towns, S. of Gradisca, the former noted for its mineral waters. Along the coast of the peninsula of Istria, south from Tricste, are:—*Citta-Nova*, a small town, with 800 inhabitants and a fine harbour; *Parenzo*, an episcopal city, with 2000 inhabitants, noted for the ancient mosaics in the cathedral; *Orsera*, a small place with quarries of white stone used for the buildings of Venice; *Rovigno*, with 10,000 inhabitants, a double harbour, flourishing trade, fisheries, and shipbuilding yards; *Pola*, a small place, in a desolate and unhealthy region, but with a superb harbour, a large amphitheatre, and other remains of Roman antiquities, and a cathedral built in the 9th century. The port of Pola has become an object of interest from the intention of the Austrian government to make it their great naval station. It has water enough for the largest three deckers close to the shore, and anchorage room for all the navies of Europe. Vessels lie protected from every wind; and except with wind at east and north-east, it can be safely and freely entered; and even then, unless the wind blow very violently, the entrance being half a mile wide and the shores quite bold, most vessels can work in. Several forts and martello towers have been and are in the course of being erected for its defence, and other preparations are making to fit the place for its intended purpose. *Peroi*, a small village, 7 miles from Pola, inhabited by about 60 families of Greeks, who preserve their original language, in the midst of Italians, Istrians, and Slavonians; and *Promontore*, a village of 400 inhabitants, at the most southernly point of the peninsula, where a fine lighthouse has been recently erected. In the interior are *Dignano*, a healthy town with 3500 inhabitants; *Montona*, on the Quieto, noted for its large forest, which supplies wood for shipbuilding; and *Serignacco*, a small town, with a great alum-work which rivals that of Canotaw in Bohemia. In the Gulf of *Quarnero* are:—a small episcopal city in an island of the same name; and *Lussin-Piccolo*, a stirring town of 3700 inhabitants who are devoted to maritime commerce.

§ 2. *Kingdom of Bohemia, comprising Bohemia, Moravia, and Silesia.*

BOHEMIA is situate between 48° and 51° N. latitude; its form is an irregular square bordered by mountains chiefly of granite, gneiss, and other primitive rocks, underlying the coal formations and red sandstone, above which again are strata of green sandstone and brown coal. Its area is about 20,000 square English miles. There is every reason to believe that it once formed a great lake, which was drained by the bursting of the northern mountain barrier, where the Elbe now carries all the collected waters of Bohemia through a deep gorge. The climate is rendered by the geographical features of the country more severe than might be expected from its latitude; but, at the same time, it varies greatly according to the elevation of the ground; the plains and valleys being warm in summer, while the mountains are cold and bleak; but in winter damp thick fogs rest upon the valleys, and cold sharp winds sweep the open plains. The annual fall of rain differs in a like manner; 20 inches a year are said to be a frequent average. The soil is in general good, but the agriculture very backward. The chief products are wheat, barley, rye, oats, potatoes, hemp, flax, and hops; and in some warm situations, vines. The pastures are extensive, and in many parts equal to those of Saxony and Silesia; but the people are far behind their neighbours in the management of their flocks and the quality of their wool; in the rearing and training of horses great improvement has been made, the Austrian government having established studs in different parts of the country. The forests are of great extent, and supply vast quantities of timber, for the conveyance of which and of other bulky commodities the Elbe and the Moldau are of great service. The border mountains are mostly composed of primitive rocks; but sandstone and calcareous deposits occur in the central districts. Basalts and other volcanic products are found in different parts of the country, and particularly near Töplitz, where many mineral springs take their rise. Bohemia is rich in minerals: gold is found in the beds of several streams; and there are mines of tin, silver, copper, lead, zinc, arsenic, mercury, and iron, the last of which is found in all the mountains. It likewise produces several kinds of precious stones, such as amethyst, topaz, sapphire, &c.; also jasper, marble, millstones, and the kaolin used for the manufacture of porcelain. The annual produce of the most precious metals has been valued thus:—Silver, 2400 marks; cobalt, 395 tons; tin, 495; lead, 695; iron, 19,732.

The population has greatly increased during the last century and the present. According to the census of 1838 Bohemia contained 4,152,560 inhabitants, including 124,979 individuals of foreign extraction, and 150,635 natives who were absent from the country. During the last fifty years the population has been generally on the increase, and there has always been an excess in the proportion of females, their number, in 1838, exceeded that of the males by 209,994; during the last thirteen years the total increase amounted to 525,962, or 41,227 per annum, or about 1¼ per cent. About one-third of the population are of German extraction, the others being of the Slavonic stock, called *Tchekkes* or *Czeches*.* The ancestors of the Germans settled here from time to time, as mechanics, traders, and miners; and it is still by them that the public business and foreign trade are conducted, the Czeches confining themselves to husbandry in the country, or common labour in the towns. The middle classes generally speak both the German and the Czechian languages; but the latter is the only language of the lower orders, particularly in the remoter districts. The Bohemians seem now determined to have it restored to its proper place as the public language of their country; and have induced the Government to consent to the establishment of academies and institutions for the encouragement of Bohemian literature. The sovereignty has been possessed by the head of the house of Austria since A.D. 1526, and his power is as great in Bohemia as in any other part of his dominions. There are, however, provincial states, consisting of four classes of members:—clergy, great nobility, minor nobility, and the representatives of towns; but their powers are little more than nominal. They deliberate upon the measures proposed to them by the royal commissioner, but cannot originate a bill. Bohemia contributes fully £2,000,000 to the Imperial revenue, and maintains a force, regular and militia, of 50,000 men. Some of the Bohemian nobles possess very extensive domains, which are cultivated for their behoof by the peasants or serfs, who form the bulk of the population.

The manufactures of Bohemia have made considerable progress during the last and the present centuries, and have of late years experienced a rapid increase. They consist chiefly of woollens, linen, and leather: but comprise also cottons, hardware, and glass; amounting altogether to the yearly value of £3,000,000 sterling. The foreign trade with Saxony and the north of Germany is maintained by the Elbe, but with most other countries by land carriage. No where were good roads more wanted; for business is still carried on in a great measure by itinerant dealers, who pass the summer in conveying their goods to public fairs, which are held periodically in the different towns. Great exertions, however, are now making to supply this want; many miles of excellent road already intersect the country, and railroads have not only been projected, but partly executed. For administrative purposes, Bohemia is divided into 16 circles, viz. *Rakonitz, Beraun, Kaurzim, Bunzlau, Bidschow, Königingrätz, Chrudim, Czaslau, Tabor, Budweis, Prachin, Klattau, Pilsen, Ellenbogen, Saaltz*, and *Leitmeritz*; and the captainate of *Prague*. Bohemia is governed directly by an Oberst-burg-graf, or Lord-Lieutenant.

§ *Cities and Towns.*

PRAG (PRAGUE) the capital of the kingdom, situate on the Moldau, nearly in the centre of Bohemia, is a large and generally well-built town, with a population exceeding 120,000. The city is divided into four parts:—the Alstadt and Neustadt, on the right bank of the river, the Kleinseite and Hradschin, on the left. The Alstadt (old town), the original Prague, contains the buildings of the university, archbishopric and municipality, the principal churches and public edifices, the theatre, and all the best shops. It is the district of trade and general business, and its narrow streets, and grand open irregular "Place" are crowded with a dense and active population. The Neustadt (new town) is separated from the Alstadt only by a wide street built on the site of the ditch; it has generally spacious and rectangular streets, but the houses are poor, and the inhabitants chiefly mechanics, artisans, and traders of the lower class. The Kleinseite (small side) which occupies a small level space on the bank of the river, is the aristocratic district, and contains the palaces of the ancient Bohemian nobles, adorned with gardens and shrubberies, but uninhabited by their owners; and on the lofty ridge rising above it is the Hradschin, containing the vast palace of the Bohemian kings, the cathedral; and further on groups of stately buildings, terminated by the fine Premonstratensian monastery of Strabow, with its lofty towers and dark groves overhanging the stream below. Prague is the seat of an archbishop; the principal buildings worthy of notice are:—the Burg or palace, town-house, archiepiscopal seminary, military hospital, the cathedral, a large building of great antiquity, several other churches and palaces, and two fine bridges across the Moldau, which is nearly a third of a mile in width. There are several scientific and literary establishments, the principal of which is the University, of great celebrity in the middle ages, and recently restored. There are also considerable manufactures of various kinds, and the city is the principal depot for the trade of the kingdom. *Reichenberg*, on the Neisse, near the northern frontier, in the circle of Bunzlau, has numerous flourishing manufactures of woollen and cotton cloth, linen, and tanneries, and 10,000 inhabitants. *Königingratz*, a strongly fortified episcopal city, with 9000 inhabitants, 65 miles E. of Prague, and in the same circle. *Frautenau*, a small place, with 3000 inhabitants, employed in the linen manufacture; *Josephstadt* (formerly *Pless*), a fortified town with 1000 inhabitants; *Braunau; Adersbach*, a village, noted for a long valley formed by high rocks of the most singular shapes, with a brook gushing through it. *Schlan*, the chief town of the circle of Rakonitz, with 3300 inhabitants, a gymnasium, and a normal high school. *Veltrus*, a village, with a fine castle and park in an island of the Moldau, belonging to the Count of Chotek. *Chrudim*, with 5300 inhabitants, a fine church, and noted horse-markets. *Landskron*, with 2700 inhabitants, noted for linen and bleachfields, one of which is considered to be the largest in the empire, 100 miles E. of Prague. *Leitomitschel*, a small town of 4700 inhabitants, with a philosophical institute, and manufactures of muslin and paper, 88 miles E. of Prag. *Kuttenberg*, in the circle of Czaslau, 40 miles E. by S., noted for mines of silver, copper, and lead.—Population, 8000. *Budweis*, a flourishing commercial and episcopal city, at the confluence of the Malsch with the Moldau, 75 miles S., has considerable cloth manufactures, and communicates by a railway with Linz, in Upper Austria. *Krumau*, in the circle of Budweis, a busy town, with 4500 inhabitants, an economic institute, a library, a collection of models, and a botanic garden. *Pilsen*, 50 miles W.S.W. of Prague, a pretty town, with numerous manufactures of cloth, a flourishing trade, and mines of iron and alum in its vicinity.—Population, 9000. *Tepl* or *Töpl*, 28 miles N.W. of Pilsen, with 1600 inhabitants, has a celebrated abbey, with a fine church, a choice library, and a rich museum. *Marienbad*, in the same circle, a small village newly built, 1900 feet above the level of the sea, with fine baths, which are frequented by great numbers of strangers. *Eger*, in the circle of Ellenbogen, 92 miles W. of Prague, a fine busy town on the river Eger, with 9000 inhabitants. In its vicinity are *Franzensbrunnen* (formerly *Egerbrunnen*), with fine baths, much frequented. *Joachimstahl*, in the same circle, 72 miles W.N.W of Prague, noted for mines of silver and cobalt, is the chief place of a district with numerous mines, particularly of tin and lead.—Population, 4000. *Sartz*, 45 miles N.W. of Prague, a large town on the Eger, with 5000 inhabitants. *Karlsbad*, or *Carlsbad*, 72 miles W. by N., of Prague, in a deep and narrow gorge, through which the Tepel, an affluent of the Eger flows, celebrated for its fine baths, frequented by strangers from all parts of Europe, and for

* *Bohemia* is the Latin name of the country, and is derived from the *Boii*, who possessed it prior to the Christian era, and were expelled by the Marcomanni. The German name is *Böhmen*.

steel and iron works.—Population, 2600. The mineral waters rise from different sources, and are all identical in composition, but differ considerably in temperature; the lowest being 100° Fahrenheit, and the highest 165°. The principal spring is the *Sprudel*, which rises from a calcareous sinter formed by its own deposits at a temperature of 165°. The water bursts forth in a column four inches in diameter, with intermitting power, the effect of the large volumes of steam with which it is united. The waters are powerfully alterative, and in a great variety of cases, especially those connected with organic obstructions and functional derangements, they are said to be singularly efficacious. Along the whole course of the Tepel, the rock which forms the sides of the valley is granite, generally porphyritic; and the only point where these granitic walls somewhat open out is at Carlsbad, where the hot springs all burst forth. Berzelius gives the following as the mineral contents of 16 oz. of the water:—Sulphate of soda, 10.86916 grains; muriate of soda, 7.97593; carbonate of soda, 9.69500; carbonate of lime, 10.05005; fluoride of calcium, 0.02458; phosphate of lime, 0.0016; carbonate of strontia, 0.00737; carbonate of magnesia, 1.36965; phosphate of alumine, 0.00246; carbonate of iron, 0.02780; carbonate of magnesia, 0.00645; Silica, 0.57725—total, 40.60729 grains—(*Turnbull's Austria*, vol. i. p. 46.) *Leitmeritz*, on the Elbe, 35 miles N.W. by N., a fine episcopal city, with a theological institute, and 3960 inhabitants. Its territory is so fertile and well cultivated as to be called Bohemia's paradise. In its vicinity is *Theresienstadt*, one of the principal fortresses of the empire, situate at the confluence of the Eger with the Elbe.—Civil population, 1000. *Toplitz*, *Teplitz*, *Töplitz*, 15 miles N.W. of Leitmeritz, a small town with 2600 permanent inhabitants, occupies a delightful situation in a valley, with very celebrated baths, frequented annually by 6000 or 7000 strangers. In and about the town there are 17 springs, scarcely varying from each other except in temperature; that of the highest being 39½° Reaumer, equal to 151° Fahrenheit nearly. The waters are very little taken internally, but are used almost wholly for baths. It contains by analysis in 16 oz. 15.608 grains of solid matter, whereof 12.240 is carbonate of soda, 1.696 sulphate of soda, with a very little muriate of soda, carbonate of lime, iron silica and resin; and of carbonic acid gas, 2.400 cubic inches. In the same circle are:—*Rumburg*, noted for its factories and its commercial society, which keeps up a correspondence with all parts of the world, to facilitate the disposal of the manufactures of the town and neighbourhood.—Population, 3000. *Warnsdorf*, *Neuforstwald*, *Hirschenstand*, and *Steinschonau*, large manufacturing villages. At Neuforstwald M. Worm has established a Manchester factory, the productions of which rival the finest of those of Manchester. Hirschenstand has been noted during forty years for the manufacture of lace, which has sometimes employed so many as 8500 persons. The people of Steinschonau are famous for their great expertness in working and polishing glass, which is exported to all parts of Europe and America. In the circle of Bidschow are:—*Gitschin*, the chief town, contains 3000 inhabitants, with cotton-works, a gymnasium, and a castle; *Hohenelbe*, a town upon the Elbe, with 4000 inhabitants, noted for their manufactures of linen; *Neuwelt*, a large village on the back of the Riesengebirge, celebrated for its glass-works, where the finest crystal in Bohemia is made and cut. Near the left bank of the Elbe, close to the Saxon border, is situate the *Probischer thor*, a great natural arch of 80 feet span, and 120 high, under a lofty projecting rock, one of the most remarkable sights in Saxon Switzerland. *Peterswald*, a long straggling town, the first Austrian station on the road from Pirna, but still on the northern slope of the mountains; while to the south lies the battle field of *Culm* or *Kulm*, so noted in the war of 1813. Close to the village of *Arbesau* stands an obelisk of cast iron, 60 feet high, erected by the Austrian officers who were engaged in that great battle, to the memory of their commander, the Count Coloredo Mansfeld, who died in 1823, of the wounds he had received; and, not far from the obelisk, is a smaller gothic architectural monument erected by the King of Prussia to the memory of those who fell in the common cause.

MORAVIA and AUSTRIAN SILESIA (MÆHREN and SCHLESIEN) are situate to the south east of Bohemia, between it and Hungary, and form together an area of 10,268 square miles. Most of the country is covered with mountains, which in many places, particularly in the south, enclose fruitful valleys. The general elevation of the country is between 500 and 900 feet above the level of the sea, with an inclination towards the south; and the waters are chiefly carried in that direction to the Danube, by the large river Morava or March. The country is densely peopled, owing chiefly to the fertility of the soil, which produces abundance of wheat, rye, oats, barley, and, in the warmer situations, vines. The pastures also are good, and great numbers of horses and beeves are exported annually. The majority of the people are of Slavonic origin, and Roman Catholics; but are nevertheless very industrious; for Moravia surpasses every part of the empire, except the Vienna district, in the extent of its manufactures and in the use of machinery. Woollens, linens, cottons, are manufactured in large quantities both for exportation and for home consumption. Moravia possesses provincial States, whose powers are limited to such subjects as are proposed to them by the Imperial Government. Moravia and Silesia form one government, which is divided into eight circles, viz. *Brunn*, *Iglau*, *Znaym*, *Hradisch*, *Olmütz*, and *Prerau*, in Moravia; *Troppau* and *Teschen* in Silesia.

BRUNN, the capital, situate on the slope of a steep hill, at the confluence of the Schwarza and the Zittawa, 70 miles N. by E. of Vienna, may be regarded as the first town of the empire for the woollen manufacture, in which its numerous inhabitants are mostly employed, as well as in dycing, silk-works, soap-works, tobacco-works, and cotton-works. The town is well built and fortified, the see of an archbishop, and the seat of a court of appeal for both the province and the government.—Population above 40,000. The principal articles produced are thread, cloth, linen, and glass; and there is a manufactory of porcelain at a village about a mile distant. To the north of the city is the *Spielberg*, surmounted by a sort of castle, which for many years has been used as a state-prison. About 11 miles to the eastward, is the town of *Austerlitz*, which derives its celebrity from the great battle in which Napoleon defeated the Austro-Russian army in December 1805. Austerlitz is also noted for a fine castle and gardens of the Prince of Kaunitz-Rietberg.

The other most remarkable places in Moravia are:—*Olmütz* (*Holomauc* of the Slavonians), formerly the capital, a fortified city of considerable importance; the university lately erected, the college of nobles, and the library, are the principal public establishments.—Population, 19,000, including the garrison. *Sternberg*, 8000 inhabitants, and *Prosnitz*, 9000, both noted for linen; *Iglau*, 14,000 inhabitants, noted for cloth and paper works; *Neutitschen*, 8000 inhabitants, with flourishing manufactures of cloth, cotton, and linen. *Kremsier*, 4000 inhabitants, is one of the finest towns in Moravia, and contains the magnificent palace of the Archbishop of Olmütz, which has a rich library, a fine picture-gallery, fine collections of natural history, and a botanic garden. *Bielitz*, 5000 inhabitants, and *Nivolsburg*, 7000, are also noted for their cloth manufactures. *Boskowitz*; *Gross-Messeritz*, *Trebitsch*, *Teltsch*, *Triesch*; *Znaym*, *Eibenschutz*, *Bruck*; *Hradisch*, *Holeschau*, *Strasznitz*, *Ungarisch-Brod*; *Mahrisch-Neustadt*, *Schœmberg*, *Mahrisch-Trubau*; *Weisskirchen* (Slavonian *Hranice*), *Prerau*, *Frankenstadt*, *Leipnick*.

In Silesia.—1. *Troppau*, *Oderau*, *Jagerndorf*, *Jauernick*, *Freywaldau*, *Zuckmantel*; 2. *Teschen*, *Jablunka*, *Weichsel*, *Bielitz*, *Friedeck*. Troppau is noted for manufactures of cloth and arms, and for the fine palace of the Prince of Lichtenstein.—Population, 12,000. Teschen is a small but flourishing commercial town of 6700 inhabitants, and the chief town of the duchy of Teschen, which belongs to the Arch-duke Charles.

POLISH COUNTRIES.

* These consist of the single GOVERNMENT OF THE KINGDOM OF GALICIA (GALIZIEN of the Germans, HALICZIA of the Poles), which is divided into nineteen circles, viz.

Circles.	*Towns.*
Lemberg,	Lemberg or Lwow, Winicky.
Wadowice,	Wadowice, Myslenice, Kenty, Oswieczim or Auschwitz, Biala, Andrychow.
Bochnia,	Bochnia, Wieliczka, Podgorze.
Sandec,	Neu-Sandec, Neumark, Alt-Sandec
Jaslo,	Jaslo, Biecz, Krosno, Jadlowa.
Tarnow,	Tarnow, Brzescyny.
Rzeszow,	Rzeszow, Zolynia.
Sanok,	Sanok, Brzozow, Bliszno.
Sambor,	Sambor, Starasol, Drochobicz, Komarno.
Przmysl,	Przmysl, Jaworow, Jaroslaw.
Zolkiew,	Zolkiew.
Zloczow,	Zloczow, Brody, Busk, Pomorzany.
Tarnopol,	Tarnopol, Mikulince, Chorostkow.
Brzezani,	Brzezani, Bobrka.
Stry,	Stry, Bolechow, Halicz.
Stanislawow,	Stanislawow, Tysmienca, Mariampol, Buczasz.
Czortkow,	Zaloszczyki, Czortkow, Budzanow, Biclza.
Kolomca,	Kolomea, Sniatyn, Kuty.
Czuerowitz, (Buckowine),	Czernowitz, Suczawa, Poschorita.

Galicia formed part of the kingdom of Poland, and in its physical aspect resembles the rest of that country, consisting of a succession of plains, with few elevations, except in the south, where it is bordered by the Carpathian mountains. The climate is temperate and even warm. The chief products are wheat, oats, rye, and barley; and in some situations the culture of the vine is practicable. The pastures are extensive. Agriculture, however, is in a very backward state; the peasantry, till lately serfs, have still the indolent habits of slaves, and must often be compelled to labour. The roads are in general very bad, and the inland situation of the country prevents the exportation of its produce. The people are Poles; but though Popery is the established religion, most of them belong to the Greek church. The trade of the country is chiefly in the hands of the Jews, whose total number approaches half a million; but the manufactures and mechanical arts are in almost as backward a state as the agriculture. The Buckowine was formerly a part of Moldavia, and was ceded by the Turks to Austria in 1777; it contains an area of 3700 square miles and a population of 260,000. The western part, adjoining the Carpathian mountains, is high and barren, but the rest of the country is in general fertile. The forests of oak are of great extent, and seem to have given its name to the province; *buckow*, in Slavonian, signifying an oak.

§ *Cities and Towns.*

LEMBERG (or LWOW, or LEOPOL), formerly the capital of Red Russia, and now the chief town of Galicia, is a large and well-built town upon the banks of the Peltew, an affluent of the Bug. It possesses a university, a high school, two theological seminaries, and a national museum. The population amounts to 60,000, who are distinguished for their industry, the principal products of which are cloth and linen. They carry on also a considerable trade with Russia, Turkey, and other neighbouring countries. The suburbs are large and well-built, and the surrounding country is very agreeable. About 20,000 of the population are Jews. *Brody* contains a population of 22,000, of whom five-sixths are Jews. It is the entrepôt of the trade of Galicia with Poland, Russia, and Turkey, and possesses two important Jewish schools, and other educational establishments. *Drochobicz* has within a few years become the third town of the kingdom through the enterprising industry of its citizens. The population in 1826 amounted to 11,290, but must now be much greater. In the neighbourhood are rich salines. *Tarnopol*, noted for its commerce, its tanneries, and a school of philosophy (philosophische Chranstall), has a population of 10,000. *Sniatyn*, noted for its tanneries, and its cattle fairs; population, 4000. *Tarnow*, 5000 inhabitants, industrious and commercial. *Czernowicz*, the capital of the Buckowine, near the Pruth, has 7000 inhabitants, noted for their industry and flourishing trade. It has also a philosophical institute and other literary establishments. *Przmysl*, with 8000 inhabitants, is the seat of a Catholic bishop, a United-Greek bishop, and has a philosophical and theological institute, and a fine bridge over the San. *Jaroslaw*, with 8000 inhabitants, is noted for its great imperial cloth manufactory, its well frequented fair, and great trade. *Stanislawow*, 8000 inhabitants, also a commercial town. *Bochnia*, 5000 inhabitants, and *Wieliczka*, 6000, are both noted for their salt mines. Those of Wieliczka in particular are very celebrated. They are situate about 12 miles S.E. of Cracow, and consist of four different storeys or ranges of apartments under ground; the length of the excavations is more than 600 feet, and the greatest breadth more than 200; but there are so many turnings and windings that the whole length of the passages cut through the bed of salt is said to be more than 300 miles. The lowest gallery is nearly a thousand feet under ground; the chambers or halls exceed a thousand, most of which have been shut up. Some of them are of very large size, and one of them forms a chapel dedicated to St. Anthony, the patron of Cracow, who is said to have led to the discovery of these mines. The mines are the property of the Emperor, and produce a large revenue. The salt is of a dark grey colour, approaching to black. *Podgorze*, opposite Cracow, a new town of 2000 inhabitants, to whom the Emperor has granted several privileges in order to encourage their manufactures and trade. In the neighbourhood are quarries of chalk and gun flint. *Biala*, opposite Bielitz in Silesia, is noted for its numerous clothworks.—Population, 4000. *Sambor*, has a gymnasium, linen manufactures, and 9000 inhabitants. *Kolomea* is a commercial town on the Pruth, with 7000 inhabitants, and several tanneries. *Rzeszow* has a gymnasium and 6000 inhabitants, among whom are a number of Jews, who carry on a considerable trade in precious stones, and imitations, and other similar articles. *Zloczow* has 8000 inhabitants; and *Andrychow*, a small town of 2800 inhabitants, has been selected for a fortress.

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* In the Slavonic names, which are of frequent occurrence in the geography of Poland, Hungary, Russia, and Turkey, the letters *cz* are pronounced like *tz*, and sometimes so written For example, *Czar*, or *Tzar; Galacz* or *Galatz*, &c.; but *cz* is the proper orthography.

HUNGARIAN COUNTRIES.

§ 1. *The Kingdom of Hungary.*

(*Ungarn*, of the Germans — *Magyar-Orszag*, of the Hungarians.)

ASTRONOMICAL POSITION. — Between 46° 43′ and 49° 34′ North lat., and 14° 26′ and 25° 3′ East longitude.

BOUNDARIES.—*Northern :*—Moravia, Silesia, and Galicia. *Southern :*—the Military Frontier, which divides it from Turkey. *Eastern :*—Transylvania. *Western :*—Illyria, Styria, Lower Austria, and Moravia.

DIMENSIONS.—The greatest length, from the most westerly point of Croatia to the border of the Buckowine, is 470 English miles ; and the greatest breadth, which may be taken along the 20th meridian, exeeeds 300. The superficial area is estimated at 4,192.7 square German geographical miles, equal to 67,083.3 square English geographical miles, or 89,095 square English miles.

GENERAL ASPECT.—The greater part of the frontier of Hungary is formed by the Carpathian mountains, and by various branches of the Alps, which, extending into the interior to a considerable distance, form a number of beautiful valleys, watered by fine rivers; but in the interior, the country sinks into a series of vast plains, called *Puszta*, which indicate by their appearance, and by the nature of the soil, that the whole space which they occupy was formerly the bed of an inland sea, or of a great lake. These plains are divided into two great portions by a ridge of hills, which extends in the direction of south-west and north-east, along the side of the Balaton Lake, where it forms the *Bakonyer wald* (forest of Bakony), and crosses the Danube between Buda and Gran. On the mountains the soil is dry and sterile ; on the terraces which surround them, it is of moderate fertility ; a considerable portion of the plains consists of deep sand, easily worked, and yields fair crops in wet seasons, but at other times, and in particular places, presents tracts nearly barren, where for many miles not a tree, stone, bush, or living creature is to be seen, and where the sand-hills vary their position with every blast. In the neighbourhood of the Danube, the Theiss, and the Temes, the ground is boggy, and much exposed to inundations, but is capable of great improvement at little cost. The remainder of the plains consists of a rich black loam of almost incredible fertility; but is the most thinly peopled, the worst cultivated, and the least accessible portion of the country.—(*Paget*, II. 3.) The marshes, mountains, sandy plains, and other uncultivated tracts, occupy nearly half the kingdom; while less than an eighth part is under tillage ; one twenty-fifth part is occupied by vineyards, orchards, and gardens ; one-fifth by natural pastures ; and about as much more by forests and forestland.

RIVERS. — The DANUBE flows through the middle of the country, and receives in its progress a great accession to the volume of its waters from innumerable streams which pour down from the mountains on all sides. The principal of these are : — *On the right* — the *Drau* or *Drave*, which rises in the Tyrol, flows through Carinthia and Styria, and joins the Danube below Essegk. Its principal affluent is the *Muhr* from Styria. It has been lately ascertained to be navigable for small steam vessels to within a short distance of the Adriatic.

The *Sau* or *Save*, which rises in Carniola, forms, through the greater part of its course, the boundary between the Austrian and the Turkish empires, and joins the Danube between Semlin and Belgrade. Its principal affluents are the *Kulpa* and the *Unna*.

The *Raab*, which rises in Styria, and joins the Danube, below the town of Raab.

On the left—The *Waag* and the *Gran*, which join the Danube between Presburg and Buda, the former at Komorn, the latter at Gran.

The *Tisza* or *Theiss*, which rises in the north-east of Hungary, on the borders of the Buckowine, and flows in an extremely winding channel by Szigeth, Tokay, Csongrad, and Szegedin. It is navigable for barges of 300 or 400 tons through the greater part of its course. Its principal affluents are, the *Szamos, Bodrogh, Hernath, Erlau, Sajo, Karas, and Marosch.*

The *Bega, Temes, Karasch,* and *Nera*, all join the Danube, between Belgrade and the Irongate.

LAKES and MARSHES.—The *Balaton Tava* (*Platten See* of the Germans), 50 miles S.W. of Buda, is 48 miles in length, and 9 in its greatest breadth ; and its surface, including that of the surrounding marshes, is about 24 German or 510 English square miles. Its surface is about 306 yards above the level of the sea, and its depth varies from 27 to 36 feet. The water is slightly salt, and usually of a crystal clearness, but invariably becomes turbid on the approach of a storm. It is also said occasionally to ebb and flow. The sand on the shore is principally composed of iron ore and soda. The shores are in general little elevated, though in some parts they are precipitous. On the north-western shore is a romantic peninsula, named *Tihany*, with a pretty village and a monastery, projecting so far into the lake, as to reduce its breadth to 1260 feet. The lake abounds with fish of various kinds ; among which is a rare and delicious species called Fogas (a kind of perch), which frequently weighs

upwards of 20 lbs. The lake has no outlet; and is surrounded by much marshy ground, which from its small elevation cannot well be drained.

The *Ferto Tava (Neusiedler See* of the Germans), 20 miles S.W. of Presburg, is a shallow and salt lake, 23 miles long, by 10 or 12 broad, and is connected at its south-eastern extremity with large marshes, the waters of which are carried to the Danube by its affluent the *Raab*. It is too shallow to admit of navigation. The water contains sulphate, muriate, and carbonate of soda, and the saltness renders it unfit to be used, except as a medicine by the neighbouring inhabitants; the peasantry, however, collect the salt, which sometimes crystalizes on the shores, for their cattle, who are very fond of it.—*Bright's Travels*, p. 347. It is well stocked with fish, chiefly carp and pike.

The marshes are very extensive, and are distinguished by two names. Those whose surface is covered with a floating bed of aquatic plants are termed *laps;* and those whose clayey bottoms are favourable to the growth of rusbes and reeds are called *motsars*. The most extensive are situate near the middle of the large plain, on the banks of the Theiss and the Danube, and in the wide valleys of the Save and the Drave. Of the superficial area of the marshes we cannot venture to give any statement, for writers upon this subject differ so widely in their estimates, as to show that they are mere conjectures.

ISLANDS.—The Danube, in its progress through Hungary, forms a great number of islands, some of which are very large. The principal are:—the *Grosse-Schut*, along the north side of the main stream, 54 miles long, between Presburg and Komorn; the *Kleine-Schut*, on the south side of the main stream, 30 miles long, between Ragendorf and Raab; *St. Andrew's Island*, to the north of Buda; the *Csepel*, 30 miles long, below Buda and Pesth; *Margita*, near Mohacz, &c. &c.

CLIMATE AND NATURAL PRODUCTIONS. — The climate varies considerably according to the inequalities of the surface; the mountainous districts being cold, while the plains are warm, and in the summer months much hotter than in England. The products of the higher grounds are oats, barley, rye; of the lower, wheat and maize, and in the rich alluvial soil adjoining the rivers, rice. More than a fifth part of the surface is occupied by forests. Tillage is yet extremely backward; and the agricultural implements are so bad, that the farmers can do little more than scratch or move the surface of the ground. The cultivation of the vine is carried on extensively; hemp, flax, and tobacco are also raised in considerable quantities. The natural pastures are good; the horses though small in size, are swift and active; and for the improvement of the breed there are two establishments, one at Babolna, near Komorn, and the other at Mezohegyes to the eastward of Pesth. Both were intended originally for the supply of the cavalry; but the object of the latter is now confined to the rearing of stallions of choice breeds, which are sent to the provincial depots for general use; 2000 of them, besides 1000 mares, are generally maintained at Mezohegyes, which consists of a level expanse of 57,590 acres of rich land, surrounded by a deep broad ditch, and a thick plantation. The horned cattle are large and well-shaped, and roam over the grazing countries in vast herds; but they are exposed with little or no shelter alike to the cold of winter and the heat of summer; and consequently, at certain seasons diseases have often occurred among them which have been attended with great mortality. The sheep likewise pass almost the whole year in the open air; still, the quality of the wool, though inferior to that of Saxony, is not bad, and has experienced great improvement of late years. The number of the sheep is stated to be upwards of 8,000,000. There are prodigious flocks of them on the plains between the Danube and the Theiss, and on the elevated grounds of that district, where they are pastured during summer; but are either brought into the villages, or sheltered in the solitary farms, which form a striking peculiarity of the Puszta. Swine are also reared in abundance; and, though they form the principal animal food of the people, yet there are yearly from 250,000 to 300,000 exported. The feathered tribes also contribute to the wealth of the country, their feathers forming a considerable article of export to Austria and Bohemia. Great numbers of wild fowl frequent the banks of the rivers; ducks are seen in immense flocks; hawks are very plentiful; pelicans in the lower part of the river; and white herons, which yield the beautiful aigrettes. The rearing of silkworms has been of late much attended to in the southern parts of the kingdom, and especially in the Bannat of Temeswar, where the mulberry-trees are very flourishing.

SLAVONIA forms a long narrow peninsula, between the Save and the Drave, traversed by a chain of mountains covered with forests. It is only in the low grounds, on the banks of the rivers, that the temperature is sufficiently warm for the cultivation of maize and fine fruits. The higher districts produce wheat, barley, flax, hemp, and madder.

CROATIA is marked by physical features similar to those of Upper Austria and Carinthia, and consists of ranges of mountains, with narrow intervening valleys. The climate consequently varies according to the elevation and the exposure. The degree of cold is in some places as great as that upon the Carpathian mountains; while in the tract along the coast of the Adriatic, and the low grounds in the interior, the climate is comparatively mild. In the latter are raised maize, vines, and

the fruits common in the south of Europe. The forests are of great extent, and consist of oak, elm, beech, and, in the higher grounds, of fir and other pines.

The northern part of Hungary is rich in mines of various kinds. About two-thirds of them belong to the Crown, and are wrought on account of government, under an expensive system of administration. The establishment consists of four divisions, the principal seats of which are at Schemnitz, Schmolnitz, Nagy-banja, and Orawitza; the number of workmen employed is about 45,000; and the products consist of gold and silver, in small quantity, all of which is sent to Kremnitz to be coined; copper, lead, antimony, quicksilver, iron, coal, and salt. The richest mines at Kremnitz, though still wrought for gold and silver, are in a great degree exhausted, and great part of the former workings is now under water. They still, however, produce about 15,000 marks of silver, and 250 of gold annually.—(*Paget*, I. 390.) Before steam-boats were introduced, there was only one coal-mine known in the whole country; but several are now wrought along the Danube; and at Orawitza, in the Banat, coal has been found, and is now in use for the steam-boats, which the English engineers declare to be nowise inferior to the best from Newcastle; but, owing, it is said, to mal-administration, it is as dear as that obtained from England by way of Constantinople.—(*Paget*, II. 153.) The other mines of the Banat, though of great antiquity, and still worked, are less productive than those of the north. They are worked chiefly for copper, lead, tin, and zinc; and give employment to about 5000 miners. There are also about 300 mineral springs, some of which are highly celebrated, and much frequented for their medicinal qualities. In many parts of the Puszta there are soda-lakes, which dry up in summer, and leave the ground encrusted with soda, or natron, which is collected, and forms again every three or four days from May to October. It is reckoned that 50,000 cwts. might be collected annually, if care were taken. Hungary likewise produces precious stones, as the amethyst, agate, jasper, Hungarian diamonds, and garnets.

PEOPLE.—The population of the kingdom of Hungary is of a very mixed character; the principal races are the Magyars, and various tribes and colonies of German and Slavonic origin. The *Magyars* are the dominant people, and form the aristocracy or nobility of the country, though they amount to little more than a third part of the population. They are found in greatest number in the central districts, while the mountainous and least fertile regions are left to the Slavonic races. The Germans are found chiefly in the western parts of the kingdom, and in the towns, but form a small part of the population. The Magyars are the descendants of a tribe of uncertain origin from the east of the Volga, who settled in Hungary under a leader of the name of Arpad, in the ninth century. They are a handsome and spirited race, but more remarkable for their strength than their height, being very muscular, with broad shoulders, but with rather short legs and arms. Their language is clear and concise, and the sound of it soft and pleasing. They are much attached to it, and have recently got it declared by the Diet the public language of the country, instead of the Latin, which, however, all but the very lowest of them can speak. The Slavonians inhabit chiefly Croatia, and other mountain districts, in the north and south. They are of a darker complexion than the Magyars, but are well formed, and the females are distinguished by their graceful figures and movements. This race is distinguished by different names, and they differ much in their several dialects. The *Slowaks* or *Slavaks* are the oldest settlers in the northern hilly districts, and are a humble and industrious race, but addicted to drunkenness, by which they have been reduced to the lowest class of the Hungarian peasantry. They are almost all Catholics. Some of the other Slavonians are originally from Bohemia, and are partly mixed with the Slowaks; some few from Poland, many from Red Russia, named *Russniaks*, and others in the south from Illyria, sometimes called *Serbians*. In the last are comprehended the greater number of the *Croatians*, many of the *Bulgarians*, and near the sea-coast about Fiume, the *Liburni*. The *Germans* in Hungary are a numerous body; and the two classes of them are distinguished as Saxons and Swabians. The former settled in the country several centuries ago, and came from Saxony and the banks of the Rhine; the latter have arrived and settled in more recent times. They live principally along the frontiers of Austria and Styria, from the Danube to the Raab; but they also possess in the interior several large towns, and numerous smaller places. The smaller settlers in Hungary are the Wallachians, the New Greeks or Macedonians, a French colony in the county of Toronthal, another of Italians on the sea-coasts, and numbers of Turks, Jews, and Armenians in the towns. The Jews alone are about 190,000 in number.

The people are divided into nobles, citizens, and peasants. The first are divided into two classes, one of which, styled the Magnates, bear titles corresponding to those of the peers of England, while the other class, comprising the great body of the nobles, are only *eidelmen* or squires. But the principal distinction between the titled and the untitled classes is, that in the assembly of the states, or diet, the magnates have personally a seat and vote, while the others, like the Seigneurs of Old France, the Squires or Knights of England, and the minor Barons, or Lairds of Scotland, only appear by their representatives. The higher clergy are also considered as nobles, and enjoy similar privileges. The nobility alone can possess free lands, or baronies, and are exempt from taxes, tithes, and the quartering of soldiers; but, on the other hand, they are bound to perform personal military service, when the Diet decrees a general rising, or insurrection, as it is called. The family estates of some of the magnates form majorats, or pass undivided to the eldest male-heir; and some families have three or four estates, each entailed upon one of their sons, whereby their rank and influence have been sustained; but generally speaking, the estate of a nobleman of the second and inferior classes is divided among all his sons; the result of which is to produce a swarm of poor nobles, by whom the country is literally infested. The citizens, or burghers are the inhabitants of those towns which hold directly of the Crown, corresponding exactly to the imperial cities of Germany, and the ancient royal burghs of Scotland. Their privileges are nearly similar to those of the nobility; they send representatives to the Diet, and are exempted from taxes and tithes, and the quartering of soldiers. They are governed by their own magistrates, and manage their own local funds; but they cannot hold estates out of their cities, nor institute suits individually against the nobles, but only in the name of the corporation to which they belong. The peasants generally are serfs *(astricti glebæ;)* but some of the German and other colonists are free. The condition, however, of the common peasants was much improved by the Urbarium or charter of Queen Maria Teresa; they are now more protected by law than formerly, against the power of their lords; are allowed to acquire property, to leave their acquisitions to their heirs, and to become, if they can do so, citizens or burghers of the free towns. The Urbarium not only declared the peasant at liberty to quit his land when he chooses, but also conferred on him the right to retain it as long as he pleases, on the fulfilment of certain conditions; and he can bequeath it to his children. By this master-stroke of policy one half of the land in Hungary was rendered taxable; for the nobles pay no taxes, and the peasants, who pay them, had previously no right to the land. Their condition, however, is still a severe one, as they bear almost all the public burdens of the State; make and repair the roads and bridges, and supply the means of travelling along them. They are also incapable of commencing suits in the courts, against either the nobility or the burghers. The natural fertility of the country enables the landed proprietors to live in abundance, or even profusion; but the want of money keeps them at home. To remedy this great inconvenience, they are extremely anxious to procure the ready means of exporting their produce to foreign markets, and obtaining foreign products in return; but the inland situation of their country is a great drawback in this respect; for the Danube forms almost its only outlet; and circumstances have hitherto prevented it from being made available. In different parts of Hungary there are certain districts, the inhabitants of which enjoy immunities and privileges different from those of the rest of the country. Among these, the most important are *Great Cumania; Little Cumania;* the land of the *Jazygers;* and the *Haiduck towns;* all situate in the great plain. The inhabitants of the first three seem to have a common but uncertain origin; but, at present, in no part of Hungary are the language, manners, and feelings of the people more truly Magyar than among the Cumanians. In these districts the peasant is lord of the soil; his deputies sit in the Diet; but with the noble he is bound to perform military service when called on, and to contribute a part of the extraordinary subsidies occasionally granted by the Diet, while, with the peasant he bears an equal portion of the heavy public burdens. They are nevertheless the most prosperous and happy of the Hungarian peasantry.—*(Paget,* II. 523.)

RELIGION AND EDUCATION. — Four Christian sects enjoy equal civil rights, and have similar legal establishments. These are the Roman Catholic Church, the Orthodox Greek Church, and the Protestants adhering to the two Confessions of Augsburg and Geneva. The great bulk of the people, however, are Roman Catholics, who are divided into two classes; the one of which use the Latin ritual, and the other the Greek, from which circumstance they are called the United Greeks (*i. e.* Greeks

in union with the Catholic Church.) In 1840, the Latin Catholics amounted to 6 897,500 : the United Greek, only to 919,400. They are placed under the spiritual superintendence of three archbishops, those of Gran, Kolocsa, and Erlau; and of seventeen bishops, of Agram, Bosnie with Sirmien, Esanad, Funfkirchen, Grosswardein, Kaschau, Neusohl, Neitra, Raab, Roseneau, Stein-am-anger, Stuhlweissenburg, Szathmar, Veszprim, Waitzen, and Zeug with Zips; and 6345 priests. They have also 307 canonries, 160 abbeys, 89 archdeaconries, 307 vice-archdeaconries, and 3723 parish churches, besides a number of chapels. The Archbishop of Gran is primate of Hungary, and has an annual revenue of about £35,000 sterling.* The other two archbishops, with several of the bishops have also large revenues; but they are taxed in large annual sums for the singular purpose of keeping the fortresses of Hungary in repair; and at their demise the King appropriates to himself the greater part of what they may have accumulated during their lives. Next in number are the Orthodox Greeks, consisting of about 1,302,100 persons, under the charge of an archbishop at Karlowitz, and of seven bishops in the cities of Bacs, Temeswar, Carlstadt, Packracz, Arad, Ofen, and Werschetz. They have 60 presbyteries, 25 large convents, 1643 churches, 2122 pastors, and 2781 lay ecclesiastics, who form a kind of monks. The Protestant Reformed Church, on the Geneva model, includes a population of 1,800,100 persons, who are almost wholly Magyars, and are under four superintendencies established at Pesth, Papa, Miskolcz, and Debreczin. Under these are 34 synods, 1359 churches, and 1407 pastors. The Lutheran Church consists of 858,300 members, under the charge of four superintendents or bishops, residing in the cities of Presburg, Neusohl, Oedenburg, and Teissholz. Under these are 35 consistories, 487 parish churches, and 518 ministers. Besides these there are a few Armenians and Mahometans; and the Jews have 342 synagogues, with a rabbi to each. Each sect has its separate schools, colleges, and universities; and education is more generally diffused than in many of the other countries of Europe. In most of the sees schools for Catholics are supported by the prelates; and, besides, there are royal academies at Agram, Grosswardein, Kaschau, Presburg, and Raab; and at Pesth there is one of the oldest and richest universities in Europe. The schools for primary instruction in the villages are slightly encouraged; nor do the peasantry discover much inclination for instruction; but in the cities and large towns there are 103 schools for Catholics. The Protestants have schools for primary instruction in each of their parishes. The Calvinists have also burgher schools in the cities, and seven gymnasiums and three colleges at Debreczin, Saros-Patak, and Papa. The Lutherans have gymnasiums and colleges at Eperies, Presburg, Oedenburg, and Kesmark. The Orthodox Greeks have till recently much neglected education; but attempts at improvement have at last been made, and schools have been established at St. Andreas, Alt-Ofen, and Miskolcz. There are astronomical observatories at Ofen and Erlau, chemical and mineralogical institutes at Schemnitz, a military academy at Pesth; and a society was instituted in that city in 1832, under the title of the Imperial Academy of Sciences.

GOVERNMENT. — Hungary is a feudal kingdom, the sovereignty of which is vested in an hereditary King or Queen, and a Diet or Parliament, composed of the magnates or greater nobility and ecclesiastics, and representatives of the minor nobility, citizens, and burghers. The crown is at present vested in the Emperor of Austria; but in the case of the failure of heirs, it falls to be disposed of by the Diet. The constitution is based upon the Golden Bull of King Andreas II., dated in A. D. 1222, and confirmed by subsequent treaties and enactments, which, however, merely secured to the privileged classes their ancient rights, but left the peasantry in a state of servitude. The executive power belongs to the King. He is the source of titles and offices, nominates the higher ecclesiastical dignitaries, and the judges of the courts of law. He makes war or peace, can assemble and dissolve the Diet, and call out the whole military power of the nation. He receives the incomes of all vacant ecclesiastical benefices, and is heir to the property of such noble families as become extinct. He has also the direction of the universities and colleges, and appoints their higher officers from the class of nobles. The appeals to Rome upon the affairs of the Catholic Church can only be made through him; and for a long time past the royal authority has been constantly exercised to limit the number and the causes of such

* Mr. Paget, however, says,—"It is difficult to ascertain the exact amount, but common rumour generally estimates it at £100,000 per annum; — though some reduce it to £80,000, or even £60,000." — I. 190.

applications. And though he may not interfere directly with the management of ecclesiastical affairs among either the Lutherans or the Calvinists, yet he claims and exercises the right of general superintendence. Thus he appoints the places where their synods shall meet, and insists that there shall be present at all such meetings a representative who is not a Romish prelate or priest. Their books also are subjected to a censorship appointed by the government. The King must be of the Catholic religion, and, at his inauguration, must swear to maintain the rights and privileges of the States. Within six months after his accession, he must assemble the States, and in their presence, in the open air, swear to maintain their privileges, to leave the crown of St. Stephen* within the kingdom, and to allow the States to elect a king upon failure of issue, both male and female, of the Emperors Charles VI., Joseph I., and Leopold I. During a minority, the Palatine is guardian of the kingdom; but the King is capable of assuming the exercise of power when he has completed his fourteenth year. The King being resident out of the kingdom, the government is directly administered by the Palatine, with the nominal assistance of a council appointed by the King; but in fact all orders on important matters emanate from the Imperial Government, and pass through the Hungarian State Chancery at Vienna. The constitution to which the King swears at his coronation, is intituled the Golden Bull, and was wrung by the Magyars from their feeble King, Andreas II. It contains, however, one clause, which the King excepts from his oath, viz. the right of the subjects to offer resistance in the case of misgovernment on the part of the King.

The *States* of Hungary consist of—1. The prelates, to which class belong the archbishops, bishops, abbots, and priors of the Roman and Greek churches; 2. The temporal barons and magnates, the high bailiffs of the provinces, and the counts and independent noble proprietors of estates; 3. The nobility or knights, who do not attend personally, but choose two deputies for each county; and, 4. The deputies from the royal towns. Every noble, however, claims the right to appear in person at the Diet, and only submits to be represented, because it is more convenient, but without giving up his right to a direct share in the legislation. The purposes for which the States assemble are, the coronation of the King, the election of a Palatine, the admission to, or exclusion of nobles and cities from their rank, the granting of subsidies and the imposition of taxes, and the framing of new laws, or rather the giving of their assent to such laws as the King may enact. By the constitution the States should be convened every five† years at least, or oftener if pressing circumstances require it; but of these circumstances the King is the judge, as the States are only convened by his summons. The Diet does not assemble in annual sessions, but remains sitting till all the business is finished, so that a new election takes place for every Diet. Formerly a few weeks or months were sufficient for this purpose, but latterly the importance of their business has made them sit for years in succession. The States meet in two chambers, or tables. The Magnates' Table is composed of the Palatine as president, the royal barons and counts, the great officers of state, and lords-lieutenants of counties, who are all named by the Crown, except in a few cases where the office has become hereditary in certain families; the prelates; and the regalists, or titled princes, counts, and barons, of the age of twenty-five years, who are summoned individually. The other chamber, called the States' Table, consists of the deputies of the minor nobility, of the countics, of the free towns, of such of the magnates as cannot, or do not choose, to attend in person, and of the widows of magnates. The deputies, however, of the towns have only the right of sitting and speaking in the chamber, but not of voting; a privilege of which they were deprived by the nobles on account of their subserviency to the Crown. The deputies of the magnates and widows neither speak nor vote. But though the States meet in two chambers, they vote in four distinct bodies, and the absolute majority of those present determine each question in that body. If the King and

* The Magyars made their first appearance in Hungary, A.D. 894, under a leader named Almus; and by the year 900, the people who then possessed it were extirpated or subdued by him or his son Arpad. This chief and his descendants assumed the title of Duke; and in the year 973, Duke Geysa and some thousands of his chief people embraced the Christian faith. Waik, the son of Geysa, assumed at his baptism the name of *Stephen*, and for his success in converting his subjects, and extirpating heathenism, was canonized after his death. He sent an embassy to the Pope Silvester II. from whom he obtained a crown, the one so carefully preserved, with the royal title; and thus commenced the kingdom of Hungary in A.D. 1000. Stephen appointed bishops, and marked out their dioceses; founded numerous churches, convents, and schools. He is said to have likewise given the Magyars a political constitution, but his laws are lost or forgotten. The crown remained in the family of Arpad till the fourteenth century; at length, in 1527, the Archduke Ferdinand of Austria, was elected king; and his descendants have possessed the kingdom ever since.

† Mr. Paget says *three*.—I. 172.

three of these bodies settle any point it becomes a law. The sitting of the Diet depends upon the King. During their sitting the deputies used to be maintained at the expense of those who sent them; but by the Diet of 1825 the peasants were freed of this tax. Each county has also a Diet, in which its own affairs are discussed and regulated, and to which appeals may be made from the baronial courts. When the general Diet is to be assembled the summons of the Monarch states the purposes for which it is to meet, to those sub-diets, which have thus an opportunity of discussing the matter beforehand, and of instructing their deputies how to vote; and these are, properly speaking, only delegates sent to express the opinion of their constituents. No project of a new law originates with any of the States; and, in fact, by the general and tacit consent of all parties, the general Diet used to be assembled as seldom as possible. During Maria Teresa's long reign of forty years it was called together only twice; Joseph II. never summoned a Diet at all, but ruled as absolute king; and, during the present century, there was no meeting of the Diet till 1825; but it has assembled regularly since, and has assumed an important place in the government.—(*Paget*, vol. i. ch. 6.)

Each of the fifty-two counties (*varmegye*) into which Hungary is divided, has a separate local administration, and constitutes a kind of State within itself; nor can the general government legally interfere in its affairs, or even execute the laws within its boundaries, except through the county officers, all of whom, except one, are chosen by the people (*i. e.* the landed gentry, who alone constitute the *populus Hungariæ*), every three years. The single exception is the Fo-Ispan, or Lord-Lieutenant, who is the representative of the King, and is appointed directly by the Crown. Except at the triennial elections, or on other great occasions, this officer generally resides in the capital; and the more important of his duties devolve upon the elected Vice-Ispan, or Al-Ispan, as he is more commonly called, or in Latin, Vice-comes, who answers in some respects to the English Sheriff. In the absence of the Fo-Ispan he summons and presides at all the county meetings, corresponds with the central government, and carries its decrees into effect. It is through him also that the deputies at the Diet communicate with their constituents, and receive their instructions. He possesses the supreme direction of the county police, and presides as chief judge in the county courts, besides holding his own courts for the trial of minor offences, and small debt cases. A first and second Vice-Ispan are always chosen, in order that, in case of the illness or unavoidable absence of the one, the other may supply his place. The municipal officers below the Vice-Ispan, and elected by the county, are the Szolga-birok, the Jurassores, the receivers of the State and county taxes, collectors, fiscals, and others, besides a medical officer of health, surveyors, jailors, police officers, &c., who are elected for life. The most important of these is the Szolga-birok or county magistrate. With the assistance of the Jurassores or sworn assessors, he manages the separate districts (*kerulet*), into which each county is divided: his duties extend to the administration of justice in petty cases, the quartering of soldiers, and the superintendence of police. All these officers receive small salaries, varying from £80 that of the Vice-Ispan, to £10 that of the Jurassor. The salaries are not intended as a remuneration for their services, but only as a provision for extraordinary expenses, it being especially stated that none but men of substance, and capable of living on their own property shall be appointed; no man, when chosen, can refuse to serve. The office of Vice-Ispan is considered highly honourable, and is much coveted by men of rank. Four times in the year at least, or oftener if necessary, the Fo-Ispan, or Vice-Ispan, is obliged to call a public meeting (*Markalis-Szek* or *Congregatio*), of all the nobles and clergy of the county. These congregations are both political and municipal. During the sitting of the Diet the questions then before it are here discussed, and instructions as to their votes sent to the deputies. Here too the wants and grievances of the county are debated, and orders sent to the deputies to introduce bills to remedy them. They have the right of corresponding not only with other counties, but even with foreign powers; and are, in short, little less than provincial parliaments. In their municipal or local character, they manage and direct the means of communication, as roads, canals, and the navigation of rivers; assess the taxes, and levy the soldiers ordered by the Diet; provide for the county expenses; assize the price of corn and meat; and in short, perform all the business which the government of a county can require. They have also, among others, two extraordinary privileges, — to disregard the King's orders if they are found by the meeting to be contrary to law; and, to cite before them any noble who leads a scandalous life, and oblige him to reform, or to expel him from the county.

The municipalities of the Royal boroughs or corporate towns are of German origin, and dependent in principle. The municipal body consists of a *Senatus* and a *Kozseg*. The former contains twelve members, from whom are chosen annually the *Polgar-mester*, or mayor, the *Varos-biro*, or judge of the town; and the *Varos-capitany*, or captain of police. The *Kozseg* forms the town-council, from which the members of the senate are chosen. Both of these bodies are self-elected, the members retain their situations for life, and are generally elected, or we might almost say nominated, by the controlling influence of the Crown, and are completely subservient to its wishes and purposes. They are the guardians of the corporate property, and levy taxes to defray their local expenses; they also send deputies to the Diet, but these deputies must be chosen from among the Senators, who are subservient to the Crown; and on this account the Diet has deprived the town-deputies of their votes. Every village likewise forms a community in itself, and is governed by its own elected officers, assesses and collects its own taxes, and generally manages its own affairs; but the Lord of the Manor has, to a certain extent, the same power in the village which the King possesses in the county. The chief officer of the village is the *Biro* or judge, who executes all the magisterial and public duties, aided by a *notarius* to keep the accounts; two assessors to assist in his judicial functions, as *kis-biro* or little judge; and several *haiduks* or town-officers. With the exception of the haiduks, all these officers are paid as well as elected by the peasants; the Biro's salary, though small, is a sufficient inducement to him to take the office, and, during his continuance in it, he is exempted from labouring for his Lord or for the county. — (*Paget*, vol. ii. ch. 2.)

The last Diet closed its sittings in May 1840, after voting 38,000 troops for ten years service, with the usual annual subsidy, and passing several important acts. Commercial tribunals are to be established in nine of the principal towns, with a court of appeal at Pesth, and these will afford to the merchant as speedy and certain justice as he can obtain in any other part of Austria, thus placing one of the greatest obstacles to the commercial relations of foreigners with Hungary in the way of being obviated. The laws have been in most respects assimilated to those of Austria, and all parties are now raised to a legal equality, in commercial and pecuniary transactions, if it be previously stipulated that their differences shall be referred to the new tribunals. A great improvement has also been effected in the condition of the peasants, who are now allowed to free their lands for ever from all feudal services, on payment of a sum of money; in fact to become landowners, a privilege hitherto reserved exclusively to the nobles, and to have their land clear of entail. About 400,000 farms, averaging 40 acres each, have thus become disposable property, and nearly half a million of families have been raised in the social scale. They are no longer liable to arbitrary punishments, and cannot be imprisoned except on conviction before the proper authorities. It has been decreed that in mixed marriages, all the children shall follow the religion of their father, and in case of refusal by the clergy of any denomination to perform the nuptial ceremony, marriage by those of one religion is to be held sufficient, and binding on both parties. The obstacles formerly existing to a change of religion have been removed; it is only necessary now to state the reasons to the civil authorities, and the royal assent is obtained. Concessions have been made in favour of the Jews, but the bill for placing them on an equality with other subjects, after passing both tables of the Diet, has failed to obtain the royal assent. The discussions of the Diet are also now printed; but not the principal debates of the delegates; for as the Government persists in appointing the president of their chamber, the members prefer to have all important matters discussed in committees of the whole house, where they put the president aside and elect their own chairman; and the discussions of committees are not allowed to be published. A commission has been formed for the revision of the criminal laws. Arrangements are likewise making for a redistribution of the land in farms, so as to give the peasant in one lot what he now holds in detached parcels; and also to consolidate the estates of the original proprietors, which will much facilitate agricultural improvement.

The Hungarians are proud of comparing their political constitution to that of Britain; but it more resembles what the British constitution was in feudal times than what it is now. Still the existence of a formally free constitution is what the Hungarians are every day becoming more and more disposed to avail themselves of for the purposes of national improvement, and the amelioration of their social condition. The progressive diffusion of knowledge among all classes through the instrumentality of the numerous educational establishments which are in operation, must be continually

adding to the number of those who desire to be free and unfettered in all their political and social relations; and the day may soon come when all the power of the Emperor will fail to perpetuate the state of subjection in which the great body of the Hungarians have hitherto been kept both by the Crown and the nobles.

FINANCES. — In revenues, as in all other branches of government, Hungary is a totally distinct kingdom, and partakes in no way of the general taxation of the empire. She furnishes by a vote of the Diet an army of 64,000 men, and grants for their support the fixed sum of 5,000,000 florins, or about £530,000 which is raised by a sort of land-tax upon the peasant cultivators. To this sum may be added about 160,000 florins, raised as a toleration-tax from the Jews; about 150,000 florins paid from the episcopal benefices for the support of fortifications; and 16,000 florins levied on the Zips towns.* These form the whole amount of the direct taxation, in the collection of which no officers of the Crown are employed; but the county courts, composed of the nobles of each county, raise it by their own officers, and transfer to the royal receivers. Besides these, however, Hungary furnishes some portion of the indirect imperial revenues, under the heads of customs, stamps, lotteries, post-office, and salt monopoly; but, upon the whole, her fiscal contributions, considered with reference to her numerical population, are very far below that of the German and Italian provinces. — (*Turnbull's Austria*, II. 357.) The taxes are divided into two classes, the *cassa militaris*, or military assessment, and the *cassa domestica*, or local assessment. The Diet has the right of voting the amount of the military assessment, and the proportion to be borne by each county, but the assessment and collection is made by the counties, municipalities, and village communities themselves; who also, as already mentioned, have the management, collection and control of the local taxes, which are levied for, and applied to, their own local purposes. But this military cess, which is all that is under the control of the Diet, amounts to less than one-sixth part of the public revenues of the kingdom, the other five-sixths consisting of indirect taxes levied by the royal authority, without the consent or control of the Diet. Nearly two-thirds of the whole amount of indirect taxes are levied upon salt, not only without the consent of the nation, but in opposition to its remonstrances; but the Government obstinately maintains it, and will probably continue to do so till the nobles consent to bear their share in the public burdens of the State. Of the amount of the local taxes it is difficult, if not impossible, to obtain an account. The cassa militaris amounts to about £530,000 sterling; and the whole of the public or general taxes together to less than £3,500,000. — (*Paget*, II. ch. 2.)

ARMY. — The regular or standing army in time of peace, amounts to 64,000 men; but in the event of war that number may be readily doubled at the call of the Crown by an extraordinary levy called the *insurrectio*, in which all the nobles are obliged to take part. The army is kept up partly by voluntary enlistment, and partly by forced contingencies supplied by the counties and towns, according to their extent and population.

PRODUCTIVE INDUSTRY. — Throughout Hungary agriculture among the peasantry is in a very primitive state. In the poorer districts the ground is allowed to lie fallow every other year, and is rarely manured; while the implements with which it is cultivated are very rude. Rotation of crops is never thought of. Barley is rarely found in any part of the country, and green crops, except among a few agriculturists, who have adopted a better system, are completely neglected. The manufactures are also still in an infant state. Till recently the principal occupation of the people, besides agriculture, was confined to the making of very coarse cloths, various kinds of woodenware for furniture, musical instruments, and toys. The spinning of flax is a domestic manufacture carried on in the family of almost every peasant. There is also a considerable quantity of woollen cloth made throughout the kingdom, but it is of coarse quality, and adapted only for the peasants; extensive manufactories have lately been established at Gacz, Illlawa, Kaschau, Munkatsch, Lipersdorf, Mosztenie, and Presburg, chiefly by Germans. At these places machinery has been introduced, and the cloth cloth made is of fine quality, and well finished. Silks and ribbons are manufactured at Pesth, Grosswardein, and Presburg, but only to a small extent. The leather of Hungary is much valued, but the quantity is not equal to the consumption; and the hides of the cattle are still sent to Germany, though there are numerous tanneries at Presburg, Funfkirchen, Ratko, Zips, and Debreczin. Paper is manufactured to a considerable amount, but is generally of very bad quality. Ironmongery articles are

* There are 16 free towns in the county of Zips, inhabited by an ancient German colony, under the peculiar jurisdiction of their Grafs, and an administrator who resides at Iglo.

manufactured at Zips, Abouigvar, Sarosch, Zemplin, Verschod, and the county of Gomerer. The best steel is made in Diosgyvor, and the vicinity of Neusohl; and the swords and other weapons manufactured in the different hardware districts are of excellent quality, though of clumsy and awkward forms. Green glass is made in different parts of the kingdom; the sugar-refiners supply the domestic consumption of that article; snuff and tobacco are manufactured almost exclusively from plants raised in the country. The soap is very good, and made mostly at Debreczin, where there are 78 manufactories of that article. Linseed oil, oil of turpentine, corn spirits, cordials, especially rosoglio, and a medicine for wounds named Hungary balsam, refined saltpetre, and pearl ashes, are the other principal products of Hungarian industry.

COMMERCE. — Hungary has no outlet except Fiume, or through the other Austrian States, so that the inland foreign trade of the kingdom is entirely dependent upon the caprice of the Imperial government, which, besides, deriving little revenue directly from the country, surrounds it with custom-houses where duties are collected on every article that passes. The very high rate of carriage, occasioned by the bad state of the roads, is however a greater obstruction to foreign trade than even the imperial customs. The principal foreign trade of Hungary is with Poland Silesia, and the north of Italy, sending wine to the two former, and corn to the latter; but with more distant countries its only intercourse is by the port of Fiume, which communicates with the interior of the kingdom by the only good roads it possesses. The introduction, however, of steam navigation has made the Danube available for commerce; and when the physical obstructions in the upper part of its course, and the political questions respecting its mouth are removed, or modified, the Hungarians will have such an outlet for their produce as promises an indefinite extension to the trade of the kingdom. Hungary abounds with exportable natural productions, as copper, iron, lead; coal of excellent quality; salt in great abundance and of fine quality; vast stores of timber, fit for every purpose; hemp of better quality than that produced in Russia; hides, tallow, wool, corn, and other agricultural produce; and wines of various kinds; while, on the contrary, it is in want of every article of manufacturing industry. The central point of the inland trade is Pesth, where at the four annual fairs, the concourse of people is so great, that the prices settled there regulate in a great degree those of the other parts of the kingdom. From that centre the trade diverges into four great branches, namely—1. Towards Austrian Germany by Raab, Presburg, Komorn, and Oedenburg; 2. Towards Galicia, through Kaschau, Eperies, and Leutschau; 3. To Transylvania, Moldavia, and Wallachia, through Debreczin, Ezegedin, and Temeswar; and, 4. To the Turkish dominions beyond the Danube, through Neusatz and Semlin. In all these towns annual fairs or markets are held, which are frequented by vast numbers of people from all the neighbouring countries; and there are, besides, in Hungary, 1600 places where annual fairs of minor importance are held. Though the roads are bad, yet great facilities to trade are afforded by the rivers, several of which are navigable for vessels of considerable burden. The principal commodities exported are the raw produce of the soil; the greatest amount is in live cattle; the next in value are corn, tobacco, wine, hides, and wool. The chief imports are colonial wares, linen, cotton, and woollen articles for clothing, and a few foreign luxuries. The greater part of the trade is carried on through the medium of the Jews, who, from their command of ready money in a country where that commodity is scarce, enjoy peculiar facilities.—(*Payer*, I. 132.)

ADMINISTRATIVE DIVISIONS. — The kingdom of Hungary is divided into four great provinces or circles, and two dependent kingdoms, all of which are subdivided into *varmegye* (Ger. *gespans*), or counties. It also includes five districts with peculiar privileges; as stated in the following table: —

Counties.	*Cities and Towns.**
	I. CIRCLE ON THIS SIDE OF THE DANUBE.
Pesth,	OFEN or BUDA, PESTH, Waitzen, Keszkemet, Gross-Koeroes, St. Andreas, Kolotscha.
Baes,	Baja, Thereseinstadt (*Szabadka, Theresianopel*), Zombor, Neusatz (*Neo Planta, Uj-Videk*), Bacs, or Balseh.
Neograd,	Balassa-Gyarmath, Losehonz, Gatseh-Tugar.
Sohl,	Neusohl (*Beszterceze-Banya, Banska-Bistricza*), Herrengrund, Bries, Sliaes.
Honth,	Sagh (*Ipoly-Sagh*) Schemnitz, Puganz.
Gran,	Gran (*Strigonia; Esztergom.*
Bars,	Kremnitz (*Karmoetz*), Koenigsberg, Bars.

* The names within ( ) are the Hungarian and Slavonic names.

Neutra,.....Neutra *(Nitra)*, Skalitz, Holitsch, Leopoldstadt, Miava, Privitz.
Presburg,.....PRESBURG *(Posony, Prespureck)*, Modern, Tyrnau *(Nagy-Szombath, Tyrnavia)*, Grossschutzen, Szent-Janos.
Trentsin,.....Trentsin *(Trentschin)*, Teplitze, Puchow, Rajetz.
Thurotz,.....St. Martin *(Szent-Marton.)*
Arva,.....Also-Kubin, Trsztenna, Lipnitzna, Jablonka, the Castle of Arva.
Liptau,.....Szent Miklos, Rosenberg, Deutsch-Liptsch.

2. CIRCLE BEYOND THE DANUBE.

Wieselburg,.....Ungarisch-Altenburg *(Magyar-Ovar)*, Wieselburg, Neusiedl, Ragendorf.
Oedenburg,.....Oedenburg *(Soprony)*, Eisenstadt *(Kismartony)*, Forchtenstein, Matterdorf, Ruszt, Kapuvar.
Raab,.....Raab *(Gyoer; Javarin)*, Szigeth, Martinsberg.
Komorn,.....Komorn *(Komarom)*, Aes, Dotis.
Stuhlweissenburg,...Stuhlweissenburg *(Szekes-Fejervar)*, Moor.
Veszprim,.....Veszprim, Palota, Papa, Vasarhely.
Eisenburg,.....Stein-am-anger *(Szombathely; Sabaria)*, Guns *(Kœszæg.)*
Salad,.....Szala-Egerszeg, Keszthely.
Schumeg,.....Kaposvar, Szigethvar.
Tolna,.....Szexard, Hœgyesz, Simonsthurm.
Baranya,.....Funfkirchen *(Pecs)*, Bellye, Mohacs.

3. CIRCLE ON THIS SIDE OF THE THEISS.

Zips,.....Leutschau *(Loecse; Lewocz)*, Koesmark, Goelnitz *(Golniça)*, Szmœlnitz or Schmolnitz, Neudorf *(Iglo.)*
Goemoer,.....Gross-Steffelsdorf *(Rima-Szombath)*, Pleisnitz, Rosenau, Czetneck, Dobschau, Gœmœr.
Heveseh,.....Erlau *(Eger; Agria)*, Gyœngiœs, Mezœtur.
Borsehod,.....Miskolz, Dios-Gyoer.
Torna,.....Torna.
Aba-ujvar,.....Kasehau *(Kassa, Kassovia.)*
Saroseh,.....Eperies, Sovar, Nagy-Saros, Bartfeld.
Zemplin,.....Ujhely or Satorallia-Ujhely, Zemplin or Semplin, Saros-patak, Bodrog-Kereszt-tur, Tokay.
Unghvar,.....Unghvar, Szerednye, Szobrantz, Felso-Remete.
Beregh,.....Bereghzasz, Munkacs, Podhering, Beregh.

4. CIRCLE BEYOND THE THEISS.

Marmarosch,.....Szigeth, Rhonaszek, Huszt.
Ugotseh,.....Nagyszœllœs, Halmi.
Szathmar,.....Nagy-Karoly, Nagy-Banya (Uj-Varos), Felso-Banya, Szathmar.
Szaboltsch,.....Nagy-Kallo, Nyiregyhaza.
Bihar,.....Gross-Wardein *(Nagy Varad)*, Dioszeg, Debreczin, Bellenyes.
Bekeseh,.....Gyula, Bekes, Fuzes-Gyarmathy, Szarvas, Csaba, Oroshaza.
Csongrad,.....Szegedin, Vasarhely, Szentes.
Csanad,.....Mako, Mezohegyes.
Krasso,.....Lugos, Doganaeska, Oravicza.
Temeseh,.....Temesvar, Versetz, Lippa.
Toronthal,.....Nagy-beeskereek.

5. KINGDOM OF SCLAVONIA (CIVIL PART.)

Veroccze,.....Eszek, Diaeovar, Vercœze.
Possega,.....Possega, Pakraez, Daruvar.
Syrmien,.....Vukovar, Irek, Kamenitz.

6. KINGDOM OF CROATIA (CIVIL PART.

Agram,.....Agram *(Zagrab)*, Karlstadt.
Warasdin,.....Warasdin.
Kreuz,.....Kreuz, Koprcinicza.

7. PARTICULAR DISTRICTS.

Hungarian Shore,...Fiume, Buccari, Porto-Re, Novi.
Jazygie (Jaszag),.....Jaszbereny.
Little Kumania,.....Felegyhaza, Halas, Maisa, Dorosma.
Great Kumania.....Kardzag-Uj-Szallas, Madaras.
Hayduek Territory, .Bœszœrmeny.

Cities and Towns.

BUDA (called by the Germans OFEN (Oven), in allusion to the heat of its mineral waters), the capital of the kingdom, is situate upon the right bank of the Danube, in N. lat. 47° 29′, and E. long. 19° 2′, 135 miles E.S.E. of Vienna. As a town, it has little to recommend it but an imposing appearanee from the river, being built partly at the base, and partly along the ascent of a range of low but pieturesque hills, whieh open into a sort of glen; but it contains the Palatine's palaee, the arsenal, the palaees of several magnates, and the observatory of the university of Pesth, built upon the Blocksberg. The town is commanded and overlooked by the easile, a grave, stern, and feudal-looking pile, in whieh is deposited the palladium of Hungary, the erown conseerated by Pope Sylvester, and presented by him to the King St. Stephen, in A. D. 1000. Buda communicates by a bridge of boats with *Pesth*, an elegant modern town, in a low sandy plain, built on a regular plan, with every attention to arehitectural propriety; eontaining wide, elean, well-paved streets, shops amply furnished with goods, many handsome publie edifiees, and a fine quay, which extends for a mile along the side of the Danube. The bridge of boats is about to be superseded by a suspension bridge, the erection of whieh will require nine years; the cost is estimated at £500,000; whieh is to be repaid by a toll, levied on all passengers, even nobles. The width of the river, at the ordinary level of the water, is 1408 feet; the total length of the suspended platform will be 1227 feet, in three divisions, separated by two massy towers or piers, rising 117 feet above the surfaee of the water.—(*Paget*, I. 220.) Pesth is a fashionable resort of the Magyar nobility, many of whom pass the gay season here rather than at Vienna; and it is evidently the wish of the nation to make it their capital, and to support it as such. It contains a University, one of the most riehly endowed in Europe; the Hungarian Learned Society (*Societas Erudita Hungarica*) and several other literary and scientifie institutions; and is noted for its four annual fairs, which are attended by at least 20,000 strangers from all parts of Hungary and the adjoining countries, and at which business is transacted to the value of more than

£1,000,000 sterling. The great plain round Pesth bears the name of *Rakos-mezo*, or the Field of Rakos; and is celebrated in Hungarian history as the scene of many of those wild Diets, where all the nobles used to assemble in council, armed and mounted as for war, which was not unfrequently the termination of their discussions.—Population of both towns, about 130,000. Buda is noted for its baths, which are supplied by copious hot springs of water strongly impregnated with sulphur; and close behind the town is a long range of hills, famous for red wines, which are very full-bodied, and much resemble Burgundy. At the distance of four miles from Buda is *Alt-Buda*, on the site of the ancient Aquincum, where Attila, king of the Huns, held his court; and on a hill, on the right bank of the Danube, 18 miles N. of Buda, and nearly opposite to Waitzen, are the ruins of the royal castle of *Wissegrad*, long a stronghold of the race of Arpad, and converted by King Mathias Corvinus into what was called in his day "an earthly paradise."

PRESBURG (Hung. *Posony*, Slav. *Bespurek*) is a pretty town, with an air of much cleanliness and comfort, situate on the left bank of the Danube, 35 miles east of Vienna. It was for a long time the capital of Hungary; and is overlooked by the royal castle of the Hungarian kings, boldly situate on the last peak of the lower Carpathians. Since 1784 it has ceased to be the capital; but the diet still assembles there, and the solemn inauguration or coronation of the king takes place upon a hill in the neighbourhood. It possesses an academy, or minor university, and several other institutions; has a bridge of boats, 330 paces long, across the Danube, leading to some fine and shady public walks; and though much deserted, and falling to decay, it still contains about 41,000 inhabitants. A few miles up the river lies the pretty village of *Theben*, with a romantic castle, the common Sunday resort of the citizens of Presburg.

The other principal towns and remarkable places of the kingdom we have arranged in their respective circles, numbered as in the table.

1. *Tyrnau*, or *Nagy-Szombath*, 30 miles N.E. of Presburg, is noted as a great wine mart, and has a population of 7000. *Neutra*, or *Nitra*, a small episcopal city, with 4000 inhabitants, 50 miles E.N.E. of Presburg. About 10 miles S. of Neutra is *Urmeny*, the residence of the Count Hunyadi, distinguished for his agricultural improvements. *Keszkenet*, situate in the midst of immense downs covered with sand and shells, 50 miles S.E. of Pesth, is noted for soapworks, tanneries, and markets, and has a population of 34,000. *Theresienstadt* (*Theresianopel*, or *Szabadka*), 100 miles S. by E. of Pesth, is a large town, or mass of villages, with 40,000 inhabitants, possessing manufactures of cloth and boots, tanneries, and a great trade. *Zenta*, on the Theiss, S.E. of Theresienstadt, is noted for a great victory gained by Prince Eugene of Savoy, and Duke Charles of Lorraine, over the Turks, in 1697. *Waitzen*, an episcopal city, near the Danube, 20 miles N. of Pesth, with a fine cathedral, built on the model of St. Peter's at Rome, a military school, a deaf-and-dumb school, the Academia Ludovica, and several remains of Roman and mediæval antiquities, and 10,000 inhabitants. *Kolotscha*, situate in the midst of extensive marshes, not far from the left bank of the Danube, 70 miles S. of Pesth, is an archiepiscopal city, with 4000 inhabitants, and contains a fine cathedral, a gymnasium, a college of piarists, and a considerable library. *Zombor*, 53 miles S. of Kolotscha, is noted for an Illyrian pedagogic school, and its great trade, which is much facilitated by the Franzens canal.—Population, 18,000. *Neusatz* (*Nysotts*, *Neo-Planta*, *Uj-Videk*), upon the north or left bank of the Danube, 170 miles S. by E. of Pesth, at the mouth of a canal which affords a communication into the very heart of Hungary, is a bustling trading town, with a population of 17,000. It communicates by a bridge of boats with Peterwardein, and is the centre of the trade carried on between Turkey and south-eastern Germany. *Neusohl*, 80 miles N. of Buda, is a royal and episcopal city, noted for the great quantity of copper produced by the process of cementation, and for the manufacture of utensils.—Population of town and district, 10,000. Near it is a great manufactory of arms, and at some distance are the royal forges of *Rhonitz*, where immense quantities of charcoal are also prepared; and also the mineral waters and baths of *Sliacs*, some of which are cold, and some tepid; and contain oxide of iron, with carbonic acid, salts of lime, magnesia, and soda. The cold springs are considered highly tonic; the warm as alterative and tonic.—(*Paget*, I. 371.) *Schemnitz*, 20 miles S.W. of Neusohl, is noted for rich mines of gold and silver, and for its royal academy or school of mineralogy, where about 200 students are educated at the public expense.—Population, above 22,000. *Kremnitz*, 10 miles W. of Neusohl, has rich mines of gold and silver, and a mint, to which all the gold and silver of the mining districts is brought to be coined.—Population, 10,000. In the valley of the Waag, N.E. of Presburg, are:—*Trentchin*, or *Trentsin*, a very ancient, but ruined fortress, and a decaying town, with mineral springs; and *Pischtian*, or *Pistjan*, and *Tepla*, *Teplitz*, or *Toplitz*,* two of the most fashionable watering-places in Hungary; and at *Demenfalva*, in the county of Liptau, 98 miles N.E. by E. of Presburg, is the *Drachen-hohle* (Dragon's hole), a vast cave or grotto, full of bones of gigantic animals.† *Gran*, or *Esztergom*, the ecclesiastical metropolis of Hungary, is a small episcopal city on the right bank of the Danube, 23 miles N.W. of Buda. It is noted for its baths, and a magnificent, but still unfinished cathedral, begun by the archbishop in 1821.—Population, 4000. But, though to the south of the river, its county is in this circle; while Komorn, which is situate on the north bank, is assigned to the southern circle.

2. *Guns* or *Kæszæg*, a small town with 5000 inhabitants, 60 miles S. by E. of Vienna, is the seat of the tribunal of appeal for the circle. *Oedenburg*, or *Soprony*, near the south-west side of the Neusiedler See, is noted for the industry of its inhabitants, its great cattle markets, its excellent wines, its coal-mines, and a Lutheran lyceum.—Population, 12,000. Near it is *Esterhaz*, the magnificent castle of Prince Esterhazy, but much neglected since the Prince took up his residence at *Eisenstadt*, a town of 3000 inhabitants, 12 miles N.W. of Oedenburg, and 27 from Vienna, where he has also a fine chateau and garden. In this neighbourhood also is *Frakno*, or *Forchenstein*, a small fortress belonging to his Highness, where the family treasures are kept.‡ *Raab*, an episcopal city, with a noted academy, 40 miles S.E. of Presburg.—Population, 14,000. S.S.E. of Raab, 14 miles, is *St. Marton*, a benedictine monastery upon a high point among the hills. *Komorn*, at the confluence of the Waag with the Danube, nearly midway between Buda and Presburg, in the midst of a vast plain, is a strong fortress of the first class, and as it has never yielded to the efforts of a besieger, the Hungarians deem it impregnable. It is besides a flourishing town, with considerable trade, contains two theatres, and has 17,000 or

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* *Tepla*, or *Toplitz*, is a Slavonic word, signifying *a bath*, and therefore scarcely a distinguishing name. This place is called the Tepla of Trentsin, from which it is distant 10 miles.

† For a description of this cave, see *Paget's Hungary and Transylvania*, I. 142.

‡ The possessions of the Esterhazy family about the Neusiedler See, were first granted to them by the Emperor Ferdinand II. in 1622, for the services rendered by the Count Nicolaus Esterhazy, which were greatly instrumental in securing the Austrian family on the throne. The palace of Eisenstadt was built in 1663 by the Prince Paul Esterhazy of Galantha, palatine of Hungary; but has since undergone many alterations and repairs. The Prince's flock of merinos is always kept up to the number of 250,000, with a shepherd for every hundred. His estates are said to equal the kingdom of Wirtemberg in size, and to contain 130 villages, 40 towns, and 34 castles; yet his annual revenue is said only to amount to £150,000, though capable of considerable increase.—*Paget*, I. 45.

18,000 inhabitants. At the distance of an hour's drive is *Babolna*, near which a royal stud is maintained on a great scale, intended for the improvement of the breed of the Hungarian horses; and from which the whole of the imperial cavalry might in a short time be remounted. It is a sort of military colony, where all the inhabitants are soldiers, their rulers officers, and yet where every necessary art and trade are practised. *Dotis* (*Tata*), 12 miles S.E. of Komorn, is noted for manufactures, corn-mills, saw-mills, and thermal waters, which are much frequented.—Population, 9000. *Stein-am-anger* or (*Szombathely*), a small episcopal city of 2500 inhabitants, 32 miles S. of Oedenburg, contains a fine church, a seminary, a gymnasium, and a museum of Roman antiquities. *Stuhlweissenburg*, the ancient *Alba Julia*, 40 miles S.W. of Buda, is an episcopal city, where several of the kings of Hungary have been crowned, and where they are buried, but contains nothing remarkable.—Population, 13,000. *Keszthely*, at the west end of the Balaton lake, is noted for the fine castle of Count Festetis, and a school of agriculture established by that nobleman.—Population, 4000. At the N.W. side of the lake, near Tihany, is *Fured*, a watering place, which has come into notice within a few years. *Funfkirchen*, (Five Churches) or *Pecs*, 105 miles S.S.W. of Buda, is an episcopal city, with a cathedral considered the oldest in Hungary.—Population, 9000. In the neighbourhood are rich coal-mines. *Mohacz*, a large village on the Danube, 25 miles E. of Funfkirchen, is near the scene of the great battle fought between the Christians and the Turks, A. D. 1526, in which the Hungarians were defeated, and their king, Lewis II. with seven bishops, 500 nobles, and 20,000 soldiers killed. *Folvar*, and *Tolna*, towns on the right bank of the Dambe, between Buda and Mohacz; the best tobacco in Hungary is produced at Tolna, where it was first planted in 1576. *Veszprim*, *Vasarhely*, and *Papa*, three considerable towns to the north-west of the Balaton Lake; Veszprim contains a handsome episcopal palace crowning a steep hill, which was once occupied by one of the most important fortresses of Hungary; it was for a long time in possession of the Turks, and still contains an elegant minaret as a memorial; Papa has a fine church, a flourishing Calvinistic college, and a fine castle of Prince Esterhazy, to whom the town belongs. *Ruszt* or *Rust*, a small royal free town on the west side of the Neusiedler See, with only 150 houses, but it sends members to the Diet. Behind the town rises a small hill, which constitutes its chief wealth; for it is here the celebrated Ruszter wine is grown, one of the best of the many good wines of Hungary.—(*Paget*, I. 40.)

3. *Eperies*, 140 miles N.E. of Buda, is the seat of the tribunal of appeal for the circle, and the see of a Greek bishop. A Lutheran college, the saline of *Sovar*, and the celebrated opal-mine of *Czervenicza*, in its neighbourhood, make it a place of some importance.—Population, 9000. *Bartfeld*, 25 miles N. of Eperies, a small town with 4600 inhabitants, has a gymnasium, a great pottery, and well frequented mineral waters. *Kæsmark*, among the hills, 40 miles N.W. of Eperies, is noted for its great linen manufactures, and for a Lutheran lyceum.—Population, 5000. *Rosenau*, 40 miles S.W. of Eperies, is an episcopal city, with linen bleachfields, mines of copper, iron, antimony, and lead, and public baths.—Population, 5000. *Agtelek*, 15 miles S. of Rosenau, a small town, near which is the large grotto of *Baradla*, formed in a limestone rock, subdivided into several caverns full of superb stalactites, and traversed by three brooks. It is often visited by foreigners as well as Hungarians, whose admiration is excited by the vastness of its halls, the huge proportions of its columns, and the mysterious windings of its long passages.—(*Paget*, I. 473.) *Schmoelnitz*, 30 miles S.W. of Eperies, is noted for its industry, hydraulic machinery, mint, and mines of silver and copper.—Population, 5000. *Murany*, 20 miles W.N.W. of Schmœlnitz, an ancient fortress on a lofty rock, frequently mentioned in Hungarian history, but now in ruins. *Erlau* or *Eger*, 70 miles N.E. by E. of Pesth, an archiepiscopal city, with considerable trade, cloth manufactures, and baths.—Population, 17,000. Its wines are also of great celebrity. *Kaschau*, 130 miles N.E. of Pesth, the capital of Upper Hungary, is an episcopal city, with an academy, and other educational institutions, a theatre and an arsenal. It contains also considerable works of various kinds, and carries on a flourishing trade with Poland.—Population, 9000. *Saros-Patak*, in the county of Zemplin, S.E. of Kaschau, is a large well-built town, noted for its cloth-works and quarries, a Catholic college, a superior Catholic school, and a fine library.—Population, 8000. *Tokay*, on the Theiss, 120 miles E.N.E. of Pesth, is noted for its wines.—Population, 4000. *Mischkolocz* or *Miskolz*, 80 miles N.E. of Pesth, is a large well-built town, with a great trade in wine, corn, and leather; it has also a Catholic and a Calvinistic gymnasium.—Population, 28,000. In its neighbourhood is the flourishing village of *Dios-Gyor*, situate in a delightful valley, which is celebrated through all Hungary for its forges, which produce the best iron and steel in the kingdom; and for its glass-works and paper-mills. *Bereg'h*, the chief town of the county to which it gives its name, is noted for the prodigious size of the vegetables and trees which grow in its neighbourhood.

4. *Debreczin*, 120 miles E. of Pesth, is one of the principal manufacturing and commercial towns in Hungary; but is rather an assemblage of villages than a town. It has been called "the largest village in Europe;" and its wide unpaved streets, one storied houses, and the absence of all roads in its neighbourhood, render it very unlike what a European associates with the name of town. It is, however, the place where the Magyar character may be most advantageously studied; for the language is spoken here in its greatest purity; the national costume is worn by rich as well as poor; and those peculiarities which a people lose by much intercourse with others are still prominent at Debreczin.—(*Paget*, II. 20.) The principal articles of manufacture are coarse cloth, and clothing for the peasantry, tanneries, boots, pottery, and soap. It is the great mart for the produce of the north and east of Hungary, and has four yearly fairs, which attract great crowds of strangers, and at which the Transylvanians supply themselves with colonial produce and the fineries of Vienna. It is particularly noted for its horse market, and may even be considered as the capital of eastern Hungary, for it is the seat of the tribunal of appeal for the circle, contains a library, a Calvinistic college, the principal scientific institution in the empire belonging to that sect, and so extensive in its course of study as almost to be entitled to rank as a university.—Population, 70,000. *Kardszag*, 27 miles S.W. of Debreczin, a mud-built market-town with 11,000 inhabitants, the capital of Great Cumania. *Szigeth*, near the head of the valley of the Theiss, 230 miles E. by N. of Pesth, is the chief place of the Salt administration, and the entrepot of the immense products of rock-salt dug in the neighbourhood of the village of *Rhonaszek*.—Population, 7000. *Neustadt*, (*Nagy-Banya*, or *Uj-Varos*), 210 miles E. of Pesth, a pretty little town of 4000 inhabitants, with rich mines of gold, silver, and lead, a mint, and mineral waters. The principal mine is in the *Krutzberg*, which was wrought by the Romans, and still yields a considerable amount of gold and silver, from a matrix of porphyry. *Grosswardein* (*Nagy-Varad*), a well-built town, 140 miles E. by S. of Pesth, is the residence of a Catholic bishop and a Greek bishop; has a large academy, an archi-gymnasium, a Catholic cathedral, fine fortifications, an episcopal palace, several convents, and twenty-two churches.—Population, 18,000. *Szarvas*, upon the Kœrœs, 84 miles S.E. by E. of Pesth, is a large town, with a school of practical industry.—Population, 14,000. *Csaba*, in the same county, is only a village, though its population exceeds 20,000.* *Temeswar*, the

* The long and fierce wars which Hungary sustained with Turkey, and the exposure of these open districts to perpetual invasion, first induced the inhabitants to congregate into heaps; and the habits then contracted have never since been laid aside. Accordingly, in the great plains, near the borders of Hungary, there are no such things as villages and hamlets, far less detached dwellings, to be seen anywhere; but at remote intervals you come upon towns, of the veriest huts, where dwell 6, 8, 10, and sometimes even as many as 30 thousand peasants together.—*Gleig's Germany, Bohemia, and Hungary, in* 1837, III. 300.

capital of the Banat,* 170 miles S.E. of Pesth, is one of the finest cities, and strongest fortresses, but also one of the unhealthiest places in the empire.—Population, 14,000. *Versetz*, or *Werschitz*, 45 miles S. of Temeswar, is noted for a great trade in wine and silk.—Population, 16,000. *Szegedin*, on the Theiss, 100 miles S.E. of Pesth, is a large town with manufactures of tobacco, soap, cloth, boots, a philosophical institute of the Piarists, and 32,000 inhabitants. *Vasarhely*, 20 miles N.E. of Szegedin, a town with 2500 inhabitants, situate near the vast marshes traversed by the Theiss. *Alt Arad*, on the Marosch, 25 miles N. of Temeswar, is the residence of a Greek bishop, with a gymnasium, a Wallachian pedagogic institute, the greatest cattle-market in Hungary, and 5000 inhabitants. Near it is the important place of *Neu Arad*.

5. *Eszek*, 150 miles S. by W. of Buda, the seat of the tribunal of appeal for the three counties of Slavonia, is of importance for its commerce, and still more for its fortifications, and the immense barracks and casemates said to be capable of containing 30,000 men. A superb causeway leads to *Bellye*, a lordship belonging to the Archduke Charles, where a wine, called *Villaner Wein*, regarded as the Burgundy of Hungary, is made.—Population 10,000. In the neighbourhood is a new bridge across the Drave. *Fukovar*, and *Kamenitz*, are both considerable towns on the right bank of the Danube.

6. *Agram*, or *Zagrab*, 195 miles S.W. of Buda, consists of three towns situate on the amphitheatric slope of a range of well wooded hills, and is the residence of the Ban, or viceroy of Croatia, and of a bishop; it has an academy, a gymnasium, a musical society, and an extensive trade.—Population 17,000. It contains besides a fine cathedral, and several monasteries; and the bishop's revenues are said to amount to £15,000 a year. *Karlstadt* is a small fortified city, on the Kulpa, 25 miles S.W. of Agram; and is connected by good roads with Fiume, Segna, and Carlopago.

7. *Fiume*, the capital of the Hungarian Littoral, is a small picturesque seaport town, with 6500 inhabitants, and a good harbour on the Adriatic, 53 miles S.E. of Trieste, and 270 S.W. of Buda. The new part of the town is built with considerable elegance, and contains several fine buildings. Without the town is a building of the Sugar Company, one of the largest establishments of the kind, originally created by a royal privilege, but ruined when the privilege was withdrawn. Fiume is a free port, and has some manufactures of tobacco, paper, and rosolio, but its commerce is said to be very insignificant, being confined almost exclusively to rags, staves, corn, and tobacco. It is connected with Karlstadt in Croatia, by the *Louisenstrasse*, or *Via Ludovica*, a superb road 89 miles long, passing over mountains and ravines, and formed by a joint stock company of five individuals, at the cost of £200,000 sterling. The road was opened in 1820. The neighbourhood of Fiume is delightful. Overhanging the town are the remains of an ancient castle, and near it is the spot, marked by a column, where the holy house of Lorretto, borne hither by angels from Nazareth, remained for three years and seven months. It is still a great resort of deluded pilgrims. *Buccari* and *Porto Re* may be considered as appendages to Fiume, from which the former is distant about five miles, and the latter two or three more, to the south-east. Buccari is an oval landlocked basin, surrounded by precipitous hills, with a depth of 20 to 24 fathoms in the middle, and 12 at its entrance, which faces S.S.W. On its eastern side, at a few yards distance from the shore, fountains of fresh water bubble up with great force, and form a series of little freshwater whirlpools in the midst of the saltwater. Porto Re is also a landlocked basin with a depth of 14 fathoms at its narrow entrance which faces west, and is only half a mile from the entrance of Buccari. It affords a perfect shelter from every wind. The Hungarians have a strong desire to make it their national naval arsenal, but it is too small for such a purpose, and is absolutely without fresh water.

§ 2. *Government of Transylvania.*

(German, *Siebenburgen*; Magyar, *Erdely-Orszag.*)

Transylvania lies to the south-east of Hungary, adjoining Wallachia and Moldavia, and has an area exceeding 20,000 square miles. Its surface is very diversified, consisting of alternate tracts of mountain and valley, intermixed with numerous small hills; the changes of temperature consequent upon changes of wind are frequent, and, occasionally, very great. The winter is in general exceedingly severe; while the summers are so hot as to produce the grape and the water-melon in the open air. The soil is poor, and has hitherto been little cultivated, but it is well watered, and finely adapted for the growth of the vine; the chief productions are maize and vines, in warm situations; wheat, oats, and barley on the higher grounds. The forests have been and still are very extensive, occupying nearly 4,000,000 of acres, or a third part of the country, and containing timber of the finest quality. The mines are numerous, and, though not very profitable, give employment to many thousands of people. The richest gold mines are those of *Nagy-Ag* and *Szekerem*, 10 miles from Dera, in the south-western part of the province; they produce about 150 marks of gold and 750 of silver yearly; and are particularly interesting as being the richest in tellurium of any in Europe, and indeed the place where that metal was first discovered. There are also volcanic rocks and mineral springs; and at *Bados*, in Szeklerland there is a cave which produces highly concentrated carbonic acid gas, mixed with a very small proportion of sulphurated hydrogen, which is used by the peasantry as a vapour-bath. The manufactures are generally in a rude state, and can hardly be otherwise so long as the country remains destitute of conveyance by water, or of good roads. The people consist of four principal races, besides Jews, Gipsies, Greeks, and Bulgarians. These are *Magyars*, in the north and west; *Szeklers*, along the eastern frontiers; *Sachsens*, in the south; and *Walluchs*, or *Wallachians*, who, though they form one-half of the population, have no fixed allotments of territory, but are most numerous in the central and eastern districts. The first three races only are represented in the Diet. One of the most remarkable circumstances connected with the country is the existence for many centuries of a small Sachsen or German State, surrounded by Hungarian, Slavonic, and Wallachian nations. The Saxons or Germans of Transylvania seem to have been settled in the country since the eleventh or

* The *Banat* is a district in the south-eastern corner of Hungary, between the Theiss, the Maros, and the Danube, and comprising the three counties of Temeswar, Krasso, and Torontal. It is not a hundred years since the Turks were in possession of it; and it was not till the close of last century that it was entirely free from Moslem incursions. It was left by the Turks in a wild and savage state; and contained immense morasses which tainted the air, and made it really, what a French writer has called it, "the strangers' tomb." But the philanthropic Emperor, Joseph II., determined to render it equally populous and civilized with the rest of Hungary. To tempt settlers the land was sold at very moderate prices; Germans, Greeks, Turks, Servians, Wallacks, nay even French and Italians, were brought to people this luxuriant wilderness. The soil, a rich black loam, hitherto untouched by the plough, yielded the most extraordinary produce. Fortunes were rapidly made; and, at the present day, there are some of the wealthiest of the Hungarian gentry, who were, half a century ago, poor adventurers in the Banat. The climate in summer approaches nearly to that of Italy; but the winter, though less inclement than in the rest of Hungary, is still too long and severe for the olive or the orange. Even in summer the nights are sometimes intensely cold.—(*Paget*, II. 150.)

the twelfth century, and to have been invited thither by one of the Kings of Hungary, to occupy the deserts to the east of his kingdom, and to defend it on that side from barbarians. They now enjoy the blessings of civil liberty in a greater degree than the people of most countries, and participate, by means of their representatives in the Transylvanian Diet, in the political freedom of the Magyars. The Sieules or Szeklers are a rude and ignorant people, and inhabit a mountainous district of the country along the south-eastern frontier, which, though fertile, sometimes fails to produce food enough for its inhabitants. They are apparently of the same family as the Magyars, for their language, features, and character are the same; but they were settled in this country long before the Magyar invasion of Pannonia under Arpad, in the tenth century. Transylvania has four established religions, but the prevailing one is that of the Greek Church, whose tenets are professed by nearly three-fourths of the people; while the Protestants amount only to 400,000, and the Catholics to the half of that number. Unitarianism was introduced into Transylvania by Isabella, daughter of the King of Poland and wife of the first Zapolya; from her, when regent, the Unitarians obtained equal privileges with other Christian sects, and, for some time, Unitarianism was the religion of the Court. But it is now almost entirely confined to the middle and the lower classes; and it is in the mountains of the Szeklerland that it has retained the greatest number of followers. Their total number in Transylvania is reckoned to be about 47,000; and they have a college at Klausenburg attended by about 230 students. The political constitution is nearly the same as that of Hungary, and the Diet possesses similar powers: the Austrian Government, however, with their usual base policy, were always tampering with them; and in 1835, they completely suspended and superseded them by arbitrary rule. The public revenue is about £500,000 sterling; the annual produce of the gold mines is estimated at 2500 marks, equal to £91,500 sterling; and of the silver, at 5000 marks, or £12,500 sterling.

Transylvania contains 25 counties or *Sedes*, and 4 districts, arranged in the three following general divisions:—

	Towns.
1. MAGYARLAND, (*Magyarok-resze*) divided into 11 counties and 2 districts.	Klausenburg, Thorenburg, Ebesfalva, or Elizabethstadt, Karlsburg, Abrud-Banya, or Gross-Schlatten, Zalathna, Nagy-Enyed, Deva, Gyalar, Nagy-Ag, Szekeremb, Varhely, Szamos-Ujvar, or Armenienstadt.
SZEKLERLAND, (*Szekelyek-resze*,) 5 counties.	Maros-Vasarhely (Neumarkt), Ud-Varhely, Giœrgiœ-Szent-Miklos, Illyefalva.
SACHSENLAND, (*Szaszok-resze*,) 9 counties and 2 districts.	Hermanstadt, Schœsburg, Mediasch, Muhlenbach, Bisztritz, Kronstadt (Brassow, Kruhnen), Rosenau, Nagy-Sink, Feketehalom (Zernest), Langendorf.

Towns.—1. KLAUSENBURG (*Koloswar* of the Magyars, *Klus* of the Wallachians), situate near a gorge of the little Szamos river, 210 miles E. by S. of Pesth, is a small city, but of some importance as the seat of the general government of Transylvania, and of the Magyar portion of the Transylvanians. It possesses a Catholic lyceum, approaching nearly to a university, a gymnasium, colleges of nobles, of Calvinists, and of Unitarians. — Population, 21,000. *Karlsburg*, or *Carlsburg* (*Alba-Julia*, *Gyula-Fejervar*, *Weissenburg*, and *Belograd*) 60 miles S.W. of Klausenburg, is a small town on a plain, but contains a handsome fortress, with a fine cathedral built by John Hunyadi, and containing his tomb, a mint, observatory, and library. It is the see of the Catholic bishop of Transylvania, and contains in its district the richest gold mines in the empire. — Population, 6000. *Abrud-Banya*, 24 miles W.N.W of Karlsburg, is a handsome mining town, in the midst of the wildest natural scenery. *Nagy-Enyed*, 25 miles N. of Karlsburg, a burgh of 6000 inhabitants, with a celebrated academical college, considered as the principal educational establishment of the Calvinists, and of higher repute for general education than any other in Transylvania. In the same neighbourhood are: — *Verœspatak*, noted for rich mines of gold and silver, which were worked by the Romans, and are still very productive; and *Butum*, noted for basalts of an extraordinary form. *Varhely* (*Gridischtje* or *Gredistye*) 53 miles S.W. of Karlsburg, and not far to the eastward of the Irongate pass into Hungary, is a village in the great valley of Hatzeg, in the county of Hunyad, built on the site of Zarmise-gethusa, the capital of the ancient Dacians, and the residence of their King Decebalus. It was taken by Trajan, and on its site the Romans afterwards built *Ulpia Trajana*. It still contains the ruins of an amphitheatre, and many antiquities are occasionally found. At *Vayda-Hunyad*, 20 miles N. by E. of Varhely, is the ancient castle of the greatest man Transylvania ever produced, Hunyadi-Janos, or John of Hunyad (in Latin Joannes Hnniades), who was governor of Hungary during the minority of King Ladislaus VI. in the middle of the 15th century, and the father of King Matthias Corvinus. He was himself the reputed son of King Sigismund by a Wallack girl of the valley of Hatzeg, and received from his father the name of Hunyadi, with the town of Hunyad, and 60 surrounding villages. — (*Paget*, II. p. 328.) *Thorenburg* (*Thorda*), 20 miles S.E. of Klausenburg, a considerable town, 12 miles from which are the salt-mines of *Maros-Ujvar*, the richest in Transylvania. — Population, 7000. *Szamos-Ujvar* is inhabited by Armenians, from which circumstance it obtained its German name of *Armenienstadt*.

2. *Maros-Vasarhely*, (*Neumarkt*) the capital of the Szeklerland, 50 miles E. by S. of Klausenburg, the seat of the highest legal tribunal in Transylvania, has a Catholic gymnasium, a Calvinist college, a cabinet of mineralogy, and a fine national library bequeathed to his country by Count Teleki, which contains about 80,000 volumes, and is kept in the finest building in the town. — Population, 10,000. *Schassburg*, (*Segesvar*) 30 miles S.E. of Maros, has manufactures of cloth and cotton thread, and 6000 inhabitants. *Szent-Miklos* has a fine Armenian church. *Ud-Varhely*, in Szeklerland, is a considerable town, with three churches, a castle, a college, and handsome town-house. *Sepsi-Szent-Gyorgy*, a smart little town, with handsome houses, and large public buildings, the head-quarters of the Szekler border hussars. *Keszdi-Vasarhely* contains a military school for the education of the children of the Szekler infantry, founded by the late Emperor Francis, and supported partly by a public grant and partly by the Szeklers themselves; but the management is entirely in the hands of Government.

3. *Hermanstadt*, 280 miles E.S.E. of Pesth, is the chief town of the Sachsenland, and, in a financial point of view, of all Transylvania, and the head-quarters of the commander-in-chief of the Transylvanian portion of the military frontier. It is also the see of a Greek bishop, and contains two gymnasiums, a fine national museum, with rich collections of pictures, medals and minerals, and a considerable library. The overland trade of the town was formerly extensive, but it has now almost disappeared, owing probably to the extension of steam navigation on the Danube. — Population, 18,000. *Kronstadt*, situate at the extremity of a valley, in the south-eastern corner of the country, is the most populous, most commercial, and most industrious town of Transylvania. It is the seat of a Chamber of Commerce, composed of the wealthiest Greek merchants, who carry on business to the extent of more than half a million sterling a-year. It has a printing-press, a Lutheran gymnasium, a principal normal school, and other literary establishments.—Population, about 36,000. *Bisztriz*, 60 miles N.E. of Klausenburg, a considerable town, is noted for its linen manufactures, tanneries, soap-works, and commerce. — Population, 5000. To the S. by E. of Hermanstadt is the mountain-pass of the *Rothenthurm* (*Redtower*), through which the river Aluta rushes down to the plains of Wallachia, and which is one of the most romantic of the valleys connecting Transylvania and Wallachia.

§ 3. *Government of the Military Frontier.*

The Military Frontier is a long and narrow tract of country, extending from the Bukowine in the east to the shores of the Adriatic on the west. The climate, the state of agriculture, and the degree of civilization, are nearly similar to those of the adjacent provinces. When the successes of Prince Eugene had obliged the Turks to cede this country to Austria, a constitution adapted to a frontier district was framed for it, and has continued in force ever since. Its fundamental principle is to enable the inhabitants to defend themselves, by accustoming them to the use of arms, and to give personal service in the field in lieu of taxes and land rents. Every man is liable to military service when called on; and has assigned to him a certain portion of land, which is cultivated by his family; but the ground belongs to Government, and the occupants are merely tenants in common. They form, in short, a great military colony, where both their civil and military affairs are managed by a regular gradation of military officers, assisted by the requisite civil functionaries, to manage their financial and economical business; the whole line being under the charge of a commander-in-chief, whose head-quarters are at Peterwaradein. But the fortresses, and castles, along the frontier, such as Peterwaradein, Hermanstadt, Semlin, Brod, Gradisca, &c. are occupied by garrisons from the regular Austrian army, each with its distinct commandant and peculiar jurisdiction. There is, besides, a corps of Watermen or Pontooners, called the Tschaikisten corps, who inhabit a district of about 20,000 inhabitants, near the confluence of the Theiss with the Danube, where a large body of men, whose head quarters are at Titue, is constantly enrolled for service in the management of flotillas and the passage of the rivers.

The government is divided into countics, each of which is required, even in time of peace, to keep under arms two battalions of 1200 men each; while in time of war the levy is increased to four battalions; and, in a case of exigency, the Emperor has the right to order out the whole male population. In this case all between the ages of 18 and 36 are absolutely at the disposal of the State; all above 36 and below 18 down to 12 must arm to defend their own homes; and if the active battalions should be marched away into Italy, or elsewhere abroad, the frontier duty would still be performed by the old men and boys. The acting battalions are chosen by ballot, and are always ready at any moment to take the field, but in ordinary circumstances they assemble to manœuvre, or exercise as regiments, only one month in the year, and receive pay only for the days they are actually on duty, living during the rest of the year at their own homes. But every man in his turn is obliged to take the outpost duty upon the frontiers, along the military cordon established to protect the country from the predatory excursions of the Turks, or the entrance of tbe plague. Along the whole line, from the Bocche di Cataro to Galicia, a range of guard-houses has been erected, sufficiently near to communicate with each other, and when a river intervenes they are bnilt on pontoons. Each guard-house is large enough to contain twelve men, who keep a sharp look-out during the day from its top, and at night push forward their sentries, and so dispose tbem that each shall be within easy hail of those to the right and left. Behind this chain are the guard-houses of the officers, furnished with bells and other means of alarm, whereby, in cases of extreme danger, the inhabitants along the whole line might be under arms in less than four hours. No traveller is allowed to cross the line without applying to the nearest station; and, during the prevalence of the plague or in time of war, he is liable to be shot if he do not immediately reply to the sentinel's challenge by standing still, and answering the customary interrogatories. The consequence of this extreme vigilance is, that no commercial intercourse takes place between Austria and Turkey, but at certain points fixed upon for the purpose; and that individual adventurers or illicit traders can only pass to and fro by eluding the notice of the guards, or forcing the sentries.

The government is divided into four generalates, viz. 1. *The united generalate of Karlstadt-Warasdin and the ban of Croatia*, divided into eight regiments, and including the towns of *Agram, Segna or Zeng, Carlopago, Belovar, Plasky, Petrinia, Hostainizca;* 2. *The generalate of Slavonia*, divided into three regiments and one battalion of Tschaikistes, and including the towns of *Peterwaradein, Semlin, Karlowitz, Brodt, Old Gradisca, New Gradisca*, and *Tittel;* 3. *Generalate of the Bannat* or *Banat*, divided into two regiments, and including the towns of *Temeswar, Pancsova, Karansebes, Weisskirchen*, and *Mehadia;* and 4. *The generalate of Transylvania*, divided into five regiments, and including the towns of *Hermanstadt, Kezdi-Vasarhely*, &c.

Towns.—*Peterwaradein* (*Petervarasvardin* of the Magyars) is a strong fortress, built on an isolated hill, on the south or right bank of the Danube, 170 miles S. by E. of Buda. It is a most formidable military position, its batteries sweeping every approach by land or water; and is so extensive as to be capable of receiving a garrison of 10,000 men. It communicates with Neusatz, on the opposite bank, by a bridge of boats; and both towns together contain about 20,000 inhabitants. *Semlin* is a poor, mean, deserted-looking town,* on the left bank of the Save, opposite Belgrade, situate in the midst of a marsh, and, though garrisoned by a battalion of infantry, is no longer a fortified place. It contains, however, a quarantine establishment, as a protection against the plague. *Karlowitz*, or *Carlowitz*, a considerable town, most picturesquely situate at the foot of a group of vine-clad hills, 7 or 8 miles S. of Peterwaradein, is the see of a Greek archbishop, who is primate of all the Austrian Greek subjects.—Population, 6000. *Tittel*, 20 miles E. of Peterwaradein, on the right bank of the Theiss, not far from its confluence with the Danube, has several shipbuilding yards, and an arsenal, in the latter of which are preserved several Roman antiquities dug up in the territory; and the remains of the works raised by the Romans to defend the point of the peninsula between the Theiss and the Danube are still to be seen. *Orsova*, or *Orschova*, a small town, or "pretty little village," on the left bank of the Danube, on the border of Wallachia, is a steam-boat and quarantine station, likely to become of some importance as a commercial place, from its position near the rapid called the Irongate, and at the head of the maritime portion of the navigable channel of the Danube. It is a station of the border custom-house and quarantine establishments. *Mehadia*, 20 miles N. of Orsova, is a small town, famous for its mineral baths, which are supplied by springs impregnated with sulphurated hydrogen gas, at the temperature of 133° Fahrenheit, and are frequented by people from all the adjacent countries. At the distance of a few miles is a fine Turkish aqueduct at the village of *Topletz*. *Pancsova*, not far from

* *Gleig's Germany, Hungary, and Bohemia, in* 1837, vol. iii. p. 273. Balbi's account of it is somewhat different:—"Semlin devenue depuis quelques annés tres important par son commerce avec la Turquie; on pourrait même la regarder comme la troisieme ville de tous les pays Hongrois sous le rapport commercial; pop. audessus de 9000 ames." Mr. Elliot gives the population at 3000; and Mr. Paget, 10,000; "it contains," says Mr. P., "some tolerable streets in the interior, but the part near the Danube looks as miserable as need be; indeed, the greater portion visible from the steam-boat is the gypsey town, a collection of mud huts on the side of the hill. But Semlin is one of those localities which nature herself has marked out for the position of a town. It occupies the angle formed by the junction of two vast rivers, the Danube and the Save, and it becomes necessarily a depot for supplying the wants of the people occupying their banks."—(*Paget*, vol ii. p. 90) The increase of steam-navigation on both rivers will thus, in all probability, soon make Semlin one of the principal commercial towns in Hungary.

the left bank of the Danube, 14 miles E. by N. of Semlin and Belgrade, is a considerable trading town with 9000 inhabitants. *Karansebes*, 47 miles N. of Orsova, is a small market town, to the east of which is the *Irongate pass* into Transylvania, and through which a Roman military road formerly led into Dacia. Seven miles north of the pass, and 18 N.E. of Karansebes, is *Ruskberg*, the seat of a great iron foundry belonging to Messrs. Hoffman, where 2500 persons are actively engaged, not only in working iron, but also mines of silver, lead, and copper, which have been recently discovered there. *Brod*, a fortress on the left bank of the Save, under the walls of which a town of 2000 inhabitants has grown up, 45 miles S.W. of Eszek. *Neu-Gradiska*, 35 miles W. of Brod, is a town with 3000 inhabitants, in an extremely picturesque situation, within a mile of the frontier.

§ 4. *Dalmatia and Albania.*

The kingdom of Dalmatia consists of a long narrow tract of mountainous country, and a number of large islands along the north-eastern coast of the Adriatic Sea, containing altogether an area of 5000 square miles. The ranges of mountains on the mainland are extensive and covered with forests; but there are also beautiful and fertile valleys; and the agricultural products, maize, vines, olives, and silk, are proofs of a genial climate. The country is rich in iron mines and marble quarries, but as yet they have been little wrought. Such parts of the forests as adjoin navigable rivers have been made available for shipbuilding; and no part of Europe abounds more with good harbours. The kingdom is divided into four circles, as stated in the following table:—

Circles.	*Towns and Islands.*
Zara,	ZARA, Nona, Obrovazzo, Knin, Sebenico, Scardona; *the islands* of Arbe, Pago, Grossa, Coronata, Mortero, Zuri.
Spalatro,	Spalatro, Trau, Clissa, Imoschi, Sign, Almissa, Fort Opus, Macarsca; *islands*—Bua, Brazza, Lesina, Lissa, Solta, Torcola.
Ragusa,	Ragusa, Old Ragusa, Stagno, Gravosa; *islands*—Curzola, Meleda, Lagosta, Giupana, Mezzo.
Cattaro,	Cattaro, Perasto, Risano, Budua, Castelnovo, Pastrovichi.

Towns.—ZARA, the capital of the kingdom, is situate on a strait formed by the island of Ugliano and the mainland. It is the seat of a tribunal of appeal, of an archbishop, noted for its marasquins, and important for its industry, commerce, fortifications, and harbour. It possesses a central seminary for the ecclesiastics of Dalmatia, a lyceum, a gymnasium, a college, a midwifery school, and about 5000 inhabitants. *Nona*, a small but ancient town, is noted for its great establishment for the culture of tobacco. *Obrovazzo*, is a large village, which has become of some importance, in consequence of its connexion with the splendid road which the Emperor has formed in order to facilitate the communication between Dalmatia and the Military Frontier. This road will rival those of the Simplon and the Splugen; the culminating point rises 3184 feet above the level of the Adriatic. *Sabenico*, a small seaport town with 3000 inhabitants, and the see of a Catholic and of a Greek bishop. It has extensive fisheries; and is celebrated for the beauty of its situation, the boldness of the roof of its cathedral, formed of large marble slabs, for its fort St. Nicholas, the work of San Micheli, for its ancient civilization, and for the magnificent cascade of the Kerka, one of the finest in Europe. *Trau*, is a very small town in one of the finest situations in Dalmatia, and in one of the best cultivated cantons.

Spalatro, the most commercial and most populous town of Dalmatia, is the see of a bishop, has a harbour, and 8000 inhabitants. The circuit of the town corresponds with the walls of the palace built by the Emperor Diocletian, when he took up his residence, after his abdication, at *Salona*, the ruins of which are close by Spalatro. A museum has been formed for preserving the antiquities dug up in the ruins, and Spalatro has, besides, a gymnasium and a philosophical institute. The fort of *Clyssa* defends the passage of the mountains, and forms the principal land defence of this town, which is the entrepôt of the trade between Bosnia and Dalmatia. *Knin* and *Sign* are two small fortified places; and *Opus*, a fortress on the Narenta, on the borders of immense marshes.

Ragusa or *Dubrownik*, lately the capital of a democratic republic, is a seaport town on the Adriatic, with a considerable trade, and a population of 6000, who are chiefly employed in shipbuilding and soapworks. In the neighbourhood is the fine harbour of *Gravosa*, in a delightful situation, surrounded with villages and the villas of the principal citizens of Ragusa. *Cattaro*, the seat of a bishop's see, is a small town of 3000 inhabitants, has a fine natural harbour, protected by vast barracks, and fortifications which occupy all the neighbouring heights. It has a considerable maritime trade; and is noted in the history of the French empire as the *Bocche de Cattaro*.

Islands.—*Pago*, a large island with extensive salines, and a town of the same name. *Arbe*, which supplies wood for building. *Isola Grossa*, rich in wine, oil, and salt, but without water. *Coronata*, which produces the best cheese in Dalmatia. *Solta*, which produces excellent honey. *Bua*, rich in asphalt. *Brazza*, important for its extent, population, and wine: it contains the town of *Milna*, where a number of ships are built. *Lesina*, the largest of the islands, contains Lesina, a small episcopal city, with a harbour. *Curzola*, noted for shipbuilding. *Lissa*, with fine harbours, strong fortifications, and rich fisheries. *Meleda*, a large island noted for precipices and funnels, from which sounds proceed that sometimes alarm the inhabitants. It is by some antiquaries believed to be the *Melita* of St Paul. *Lagosta* is noted for a grotto, for pretended Phœnician inscriptions, and its natural ramparts.

PRUSSIA.

ASTRONOMICAL POSITION—Between 49° and 56° North latitude, and 6° and 23° East longitude.

DIMENSIONS.—This kingdom consists of several detached portions separated at wide intervals by other States, and therefore no exact estimate can be made of its absolute length and breadth. A straight line, drawn between the north-eastern and the south-western extremities, measures 790 miles; and the greatest breadth, which extends from the south-eastern extremity of Silesia to the north-western coast of Pomerania, measures 420 miles. The superficial area measures 5077.41 square German geographical miles, or about 107,894 square English miles.

BOUNDARIES.—*Northern*:—Baltic Sea, Mecklenburg, Denmark, Hanover. *Southern*:—Austrian Empire, Saxon States, Bavaria, Hessia. *Eastern*:—Russian Empire. *Western*:—France, Belgium, Holland.

GENERAL ASPECT.—The greater part of the kingdom being included within the limits of Germany, it is unnecessary to repeat here what has been stated respecting the general aspect of that country. The western detached portion extends along both sides of the Lower Rhine; the eastern comprises a portion of the great plain which extends through the centre of Europe, from the North Sea to the Ural mountains. There are, however, considerable inequalities in the soil and surface. The greater part of the soil is sandy, generally level, and often covered with heaths, such as those of Minden, which cover 10,000 acres; those of Lippstadt, 20,000; and the still larger wastes of Senner and Fuhling; and there are many sandy plains, the expense of bringing which into cultivation would not be repaid by the value of their productions. East Prussia abounds with large lakes and morasses; and even in the fertile province of Magdeburg, the bog of the Dromling covers more than 100,000 acres. Nearly one fourth of the whole surface is occupied by forests; and only certain portions near the rivers, or in other peculiar situations, can be considered as fertile, or even tolerable soils. The most productive corn land is in the vicinity of Tilsitt; some other districts of East Prussia, and the greater part of Posen, are also productive. In West Prussia, the district of the Netz, the country round Marienburg, Danzig, and Elbing, are excellent corn countries. That part of Silesia to the east of the Oder forms a large slightly undulating plain; but the western portion is more unequal, and rises, towards the south-west, into high mountains. It contains also several extensive meadows and marshes. In Brandenburg, the land is low, and generally sandy, and so level that a great many marshes and small lakes are formed by the overflowing of its rivers. The province abounds in forests of fir, pine, oak, beech, and ash; but some districts are celebrated for the quality and quantity of their grain. In Pomerania, the soil is almost entirely formed of land gained from the sea, and of alluvial deposits; a great part of it is covered with forests and heaths, and it is only the banks of the rivers and lakes that can be cultivated with advantage. In Saxony, Magdeburg, and Thuringia, the soil is favourable for all kinds of grain; and these provinces may be considered as the granaries from which the less fertile districts obtain their supplies of corn. The western part of the kingdom is far less productive than the eastern; a few only of the Westphalian provinces are favourable for agriculture; the districts most eminent for fertility are in the vicinity of Minden and Paderborn, the borders of the Soester, and the circles of the Lieg and the Wupper. In the Rhenish provinces, the neighbourhood of Juliers, Bonn, Cologne, Coblenz, Kreusnach, Bacharach, and the banks of the Meuse, are tolerably fertile.

GULFS, BAYS, STRAITS.—The Baltic is the only sea that washes the Prussian coasts; and the only part of it which seems to bear a specific name is the *Gulf of Danzig*, at the mouth of the Vistula; but there are along the coast several collections of water which may be considered as either lakes or arms of the sea; the water is fresh, but they communicate with the sea by navigable openings or straits. The largest of these are the *Curische-haf*; the *Frische-haf*; and the *Stettiner-haf*. The Curische-haf is situate on the coast of East Prussia, is 66 miles in length, and varies in breadth from 30 at the southern end to less than one at its mouth. It is separated from the Baltic by the *Curische-nehrung*, a long narrow tongue of land; and its bed is so shallow and full of sandbanks, that it is only navigable for boats, and is, besides, exposed to frequent storms. It receives its name from the Cures, an ancient people who dwelt upon its banks; and indeed the fishermen of the lake still call themselves by the same name. The *Frische-haf* extends along the south-east side of the Gulf of Danzig, and is about 60 miles in length, and from 6 to 15 in breadth. It is separated by a chain of sandbanks from the sea, with which it communicates by the *Gatt*, a strait which is 3000 feet wide, but in many places not

more than 12 feet deep, and the lake itself is still shallower. It receives the waters of the Pregel, and two branches of the Vistula. The *Stettiner-haf*, divided into the *Gros haf* and the *Kleine-haf* (Large Bay and Little Bay), is situated at the mouth of the Oder, and separated by the islands of Usedom and Wollin from the Baltic, with which it communicates by three channels or straits. The water is quite fresh; the lake extends 28 miles in length from east to west, with a medium breadth of five miles. *Putzig Bay* is formed by a long narrow tongue of land, which projects about twenty miles into the middle of the Gulf of Danzig.

Islands.—*Rugen*, off the north-western coast of Pomerania, is about 30 miles in length and 20 in breadth; but its numerous creeks and bays give it a very irregular and singular form. It is separated from the mainland by a channel, which is at one place only a mile wide; and is partly surrounded with several smaller islands, the principal of which are *Hiddensee*, *Humantz*, and *Rudea*. The northern part of Rugen is of a chalk formation, and the peninsula of *Jasmund* is almost entirely formed of that substance. The central and other districts are covered with argil, sand, and gravel, and in some parts with red loam of a very fertile quality; so productive, indeed, that the industry of the people has been for a long time confined to agriculture and the rearing of cattle, many of which are exported to the continent. The people live together in small towns, the principal of which is *Bergen*, situate, as the name imports, upon a height, which commands a view of nearly the whole island. *Usedom*, at the mouth of the Oder, is still more irregular in its form than Rugen; the breadth being in some places less than half a mile, and in others more than 12 miles. It is partly covered with hills of sand, and with forests, which contain wild boars, stags, and other animals. The soil is not fertile, and the people are more employed in fishing than in agriculture. A strait 800 yards wide separates it from *Wollin*, a somewhat smaller, but more fertile island, with an alluvial soil and rich pastures, which yield good herds of cattle, the principal wealth of the inhabitants.

Rivers.—See Rivers of Germany, page 394.

The Vistula (German, Weichsel; Polish, Wisla) rises in Austrian Silesia, flows through Russian Poland, and the Prussian governments of Marienwerder and Danzig, passing by Craeow, Warsaw, Thorn, Culm, and Graudenz. At Montau it divides into two arms, the eastern of which, named *Nogat*, falls into the Frische-haf; and the western, still bearing the name of Vistula, again divides into two branches, one of which likewise falls into the Frische-haf, while the other flows onward past Danzig into the Baltic sea at Weichselmunde (Vistula mouth.) The Danzig channel having recently (1840) become obstructed with ice, four miles east of that city, the river has at that point cut a new channel for itself to the sea. Within a few days, the width was already 2000 feet, and the channel will probably become permanent. The Vistula becomes navigable at Cracow; but at some places lower down, even so far as Thorn, it is fordable. Its principal affluents are the *Wieprz*, *Bug*, and *Narew*, *Pilica* and *Bzura*, in Poland; the *Drewenz* and *Ossa*, in Prussia.

The Pregel, formed by the union of the *Inster* and the *Angerap*, in the government of Gumbinnen, flows through the government of Königsberg into the Frische-haf. It receives on the left the *Alle*, which passes Heilsberg.

The Niemen, or Memel, rises in the Russian territory, runs through East Prussia, past Tilsitt, and divides into two branches, the *Russe* and the *Gilge*, both of which flow into the Curische-haf.

The *Stolpe*, the *Persante*, and the *Rega*, are small streams which flow through the governments of Cöslin and Stettin, into the Baltic sea.

Lakes.—The number of lakes is said to exceed 1000, many of which are from 10 to 20 miles in length. In East Prussia there are 300; in West Prussia, 160; and in Brandenburg, 680. Many of them, however, have been contracted by artificial embankments, and the recovered soil appropriated to agricultural purposes. At present they supply vast quantities of fish. The principal of them are the *Spirding-see*, and the *Mauer-see*, in the government of Gumbinnen, and the *Leba*, in the government of Cöslin, or Köslin.

Climate. — The climate may be described generally as temperate and healthy, though, to this general statement, there are many exceptions. On the borders of the Baltic the winters are severely cold, and the weather changeable, raw, and foggy. The central provinces of Posen, Brandenburg, Silesia, Saxony, and all the western parts of the kingdom, possess a milder and less variable climate; but the atmosphere of Brandenburg, though mild, is humid, subject to frequent variations of temperature, and often exposed to violent storms from the south and east. On its sandy plains the summer heat is very oppressive, and, from the abundance of stagnant water, the climate is unhealthy; but as the country rises towards the mountains the atmosphere improves in coolness and salubrity. Silesia suffers much from rainy autumns and snowy winters. The atmosphere is in many parts salubrious; but, owing to the dense forests, and the elevation of the ground, the southern districts are exposed to long and severe winters. The climate in the northern part of the country is milder; but the lakes and marshes infect the air, and render it in many places unwholesome. The Westphalian and Rhenish provinces partake of the general climate of that part of Germany in which they are situate.

Vegetable Productions and Animals. — See Germany.

People. — The greater part of the Prussian subjects are Germans, divided into the two great branches of High and Low; but in Silesia, Posen, and Prussia, the people are of Slavonic origin, and speak various dialects of the Slavonic language. In East Prussia there are about 50,000 Lithuanians, who have a peculiar language of their own. The *Wenden*, or Vandals, have also a distinct language; they are mostly settled in Pomerania, and the districts of Leignitz and Kassubon in East Prussia, and a few in Brandenburg. Jews are to be met with in every part of the kingdom, and principally in the province of Posen; the total number amounts to about 170,000. The *Pruczi* or *Prussians*, from whom the kingdom derives its name, were an ancient people, of a mixed Wendo-Gothic extraction, who dwelt along the coast of the Baltic between the Vistula and the Niemen; but their language has long since fallen into disuse, and

the people themselves are no longer distinguishable. Being heathens, they were invaded, reduced to subjection, and forcibly christianized by the Teutonic Knights, whose possessions became the nucleus of the Prussian monarchy, to which these despised Pruczi have given their name.

POPULATION. — In the year 1819 the population of the kingdom amounted to 11,084,993; and at the close of the year 1834 to 13,510,030, being an increase of $21\frac{3}{4}$ per cent. In 1840, it amounted, as stated in the subsequent geographical and statistical table, to 14,928,501. There are in the whole kingdom 129 towns, containing upwards of 5000 inhabitants, 89 containing from 5000 to 10,000; 20 containing from 10,000 to 15,000; 12 containing from 15,000 to 30,000, and 8 exceeding 30,000.

RELIGION. — The professors of all religions enjoy freedom, and nearly equal rghts, though the Evangelical religion may be considered in some respects as that of the State. Lutheranism proper, and Evangelism, are professed by the great majority of the people in East Prussia, Brandenburg, Pomerania, and Saxony; Popery, by the majority in Westphalia, the Rhenish provinces, and Posen; while Popery and Evangelism nearly divide the population of Silesia and West Prussia. Without taking into account the smaller sects and the Jews, it may be said that three-fifths of the inhabitants of Prussia profess the Evangelical religion, and two-fifths the Roman Catholic. According to a law made in 1817, the Protestant clergy in each province are subjected to a synod composed of all the superintendents, who meet once or twice a year, to deliberate on the affairs of the churches of the province. They also superintend the schools, and take especial cognizance of the religious education given in them; and their decisions, after being approved of by the consistory of the province, are transmitted to the Minister of the Interior. The Roman Catholics are under the spiritual superintendence of two archbishops, one for the eastern province, and one for the western; they are distributed into nine dioceses and 3200 parishes. Gnesen is the metropolitan see of the eastern, Cologne of the western province. The annual stipend of the archbishops is about £1720 sterling, that of the bishops about £1150, besides perquisites; none of them can be elected without the sanction of the king. Public pilgrimages out of the kingdom are entirely prohibited; and none of greater extent than one day's journey are allowed within it. The Mennonites are excused from military service, but, in lieu of it, are obliged to contribute to the support of the military academy at Culm. Jews enjoy the same rights and privileges as Christians, with some slight exceptions, and are liable to conscription.

EDUCATION. — In no other country is the system of education so complete; and in none is the instruction of all classes so carefully provided for. The law imposes upon parents the strict obligation of sending their children to school, unless they can prove that they are giving them a proper education at home; and care is everywhere taken to furnish to the poor the means of complying with this law, by providing their children with the things necessary, and even with clothes. Every parish is bound to have an elementary school, and every town one burgh school or more, according to its population. Above these are gymnasiums, somewhat resembling in their character the high schools and grammar schools of Britain; and in these institutions, classical learning is pursued as preparatory to admission into the universities, of which there are seven, in the cities of Berlin, Breslaw, Halle, Bonn, Königsberg, Munster, and Greifswald. In order to provide the schools with proper masters, normal schools have been instituted, in which persons intending to become teachers receive instruction, not only in the requisite branches of education, but also in the theory and practice of teaching. Pecuniary assistance is also given to a certain fixed number of poor scholars of good promise. The lower schools are generally supported by the towns and villages, or by school associations; the gymnasia, and other similar establishments, by the general funds of the State, or of the province in which they are situate; the normal schools, partly by the general funds of the State, and partly by the departmental funds for schools; and the universities by the general government, or by the produce of the estates with which some of them have been endowed. The whole business of education is under the special charge of the Minister of Public Instruction, assisted by a numerous council, who are divided into three sections; one for church affairs; one for general education; and a third for medicine — all the members receiving salaries from the State. In each of the provinces there is a Provincial Consistory, formed upon the same model, whose duty it is to superintend the gymnasia and higher burghal schools; and the parish and minor town schools are under the charge of the magistrates and curates of the respective towns and parishes,

assisted by committees. There is moreover in the chief town of every circle an inspector, whose authority extends over all the schools of the circle, and who corresponds with the local inspectors and committees. In the regency of every department there is a special councillor for the primary schools, the *Schulrath*, who forms the connecting link between the public instruction and the ordinary civil administration of the province, inspects the schools, quickens and keeps alive the zeal of the local inspectors, committees, and teachers; and conducts the correspondence relative to schools, in the name of the regency, with the local and superior inspectors, the provincial consistories, and the Minister of Public Instruction. Besides the universities, there are theological academies for the Catholics, Lutherans, and Moravians, where the priests and pastors receive the instruction necessary to qualify them for their duties. There are also establishments for the study of medicine, surgery, midwifery, the veterinary art, the military profession, and rural economy, and for teaching the blind, and the deaf and dumb. The collections of natural history, philosophical and astronomical apparatus, and the public libraries, are placed upon a very liberal footing, and are accessible to any person who chooses to avail himself of their assistance.

GOVERNMENT.—The government is an unlimited monarchy vested in a king. The ancestors of the reigning family were a branch of the princely house of Hohenzollern, in Suabia; afterwards Margraves of Brandenburg, and Electors and Archchamberlains of the Holy Roman Empire in Germany; all of which dignities were bestowed upon them by the Emperor Sigismund in the years 1415 and 1417. In 1594 the Duchy of Prussia was united to the Electorate by the marriage of the Elector John Sigismund with the heiress of the last Duke of Prussia. Various accessions were subsequently made, and at length the Elector Frederick III. obtained from the Emperor the royal dignity or title of King of Prussia. King Frederick the Great, who ascended the throne in 1740, and died in 1786, acquired Silesia by conquest from Austria; and a part of Poland at the first dismemberment of that kingdom. A larger portion was acquired at the subsequent dismemberment of Poland in 1795; and at last, in 1815, the present limits of the kingdom were determined by the Congress of Vienna, and the King invested with a degree of power and political importance which he did not previously possess.

The legislative and executive power is vested exclusively in the King, and his authority is less restrained by the ancient usages and privileges of his subjects than that of any other European sovereign. The administration is vested in a Council of State, consisting of members of the Royal Family, and of the Ministers of Foreign Affairs, Finances, Justice, Public Instruction, Trade, Public Debt, Police, and War. Of this council the State Chancellor is president, and to him all the heads of the various departments are accountable, and make weekly reports; while he receives his instructions from the King. In the details of the administration, through all the departments, there prevails much simplicity, and a degree of economy, which scarcely finds a parallel under any other government.

REVENUES. — The public revenues are derived from various sources; but the most satisfactory account we can give of them will be to exhibit a statement of the receipt and expenditure for ten years, 1829–38, from which it appears that the average annual income is £7,605,675 sterling, and the average annual expenditure, £7,668,525 sterling. The public debt amounted, as on 12th January 1833, to £25,678,365 sterling.

AVERAGE INCOME for the Years 1829 to 1838.

	Prussian Dollars.
From crown-lands and forests, after deducting the sum set apart for the King's civil list,	4,313,100
From sold and regulated crown-lands for the more speedy extinction of the national debt,	1,000,000
From mines, smelting-houses, salt-works, and the porcelain manufactory at Berlin,	825,200
From the Post-Office,	1,140,000
From taxes, Regales, customs, excise, and salt monopoly :—	
Land-taxes,	9,719,500
Personal taxes,	6,604,200
Carry forward,	23,602,000

AVERAGE EXPENDITURE 1829-1838.

	Pr. Doll.
1. Administration of the National Debt :—	
Interest,	6,929,800
Sinking-Fund,	3,135,100
2. Pensions, Claims, and Life Annuities :—	
Regular pensions to the officers of government, their widows and families,	966,000
Life annuities and pensions to secularized corporations, also pensions according to the Imperial recess of 25th February 1803, and to other treaties and engagements,	1,860,300
3. Indeterminable Annuities :—	
Compensation for abandoned rights and privileges,	0,341,500
4. The King's Cabinet, the Ministry of State Office, Board of Control and of the Public Treasure, the Mint, State and Provincial Records Office, Secretary of the Council of State Herald's Office, and Statistical Department,	297,500
Carry forward,	13,430,200

	Pr. Doll.
Income brought forwd.	23,602,000
Licences,	1,897,100
Customs and excise,	19,840,200
Salt,	5,173,600
From sundry minor sources,	391,600
Total Annual Revenue,	50,704,500

Equal to £7,605,675 sterling.

	Pr. Doll.
Expenditure brought forward,	13,430,200
5. The Ministry for Clerical and Medical Affairs, and of Public Instruction,	2,537,400
6. The Home Department,	3,013,500
7. The Board of Trade, of Public Works and Roads,	2,628,600
8. The Ministry of Foreign Affairs,	623,000
9. The Army,	22,871,100
10. The Treasury,	254,900
11. The Ministry of Justice,	1,936,800
12. The Provincial Administration,	1,786,200
13. The Central and Provincial Studs,	168,400
14. Extraordinaries,	1,773,500
Total,	51,123,500

Equal to £7,668,525 sterling, at 3s. per dollar at the par of exchange.

Note.—The difference between the total average receipt and the total average expenditure should be greater, but we have omitted in the statement of the latter,—1. The interest and extinction of recognised provincial debts, which has formed an item of expenditure only for the years 1835-6-7-8, at the rate of 41,000 dollars annually; and 2. The compensations for received capitals and securities for the same four years, at the rate of 637,750 dollars annually. The Home Department, No. 6, likewise includes the expenditure for the Board of Trade during the three years 1829-30-31,; and, of course, No. 7 omits that expenditure for these years. The average income and expenditure for the three years 1829-31 was 50,796,000 dollars, and for the year 1838 the income and expenditure amounted to 52,681,000 dollars, showing a great regularity in the financial department.

ARMY. — The military strength of Prussia consists of—1. The standing army; 2. The first call of the *landwehr*, or reserve; 3. The second call of the landwehr; and 4. The *landsturm*, a militia or national guard. The effective strength of the standing army on the peace establishment is about 150,000; but when its ranks are placed on the full war complement, the numbers will amount to 337,000. The infantry of the guards amount to 16,300; cavalry of the guards, 16,080; artillery, engineers, &c. of the guards, 3220; total, 35,600. The line is composed of 40 regiments of infantry, besides 4 battalions of chasseurs and jagers (riflemen), amounting to 118,540 men; 32 regiments of cavalry, amounting to 19,100; artillery, engineers, &c. amounting to 15,800; altogether 153,440. The landwehr consists of 32 regiments of infantry, and 8 battalions of reserve, amounting to 106,140 men; 32 regiments of cavalry, with 8 squadrons of reserve, = 21,000; artillery, 12,700; altogether 139,840. There are also four veteran companies to each division, or altogether, 8100 men.

The ranks of the army are supplied by conscription and ballot. With the exception of ministers of religion, teachers of schools, persons in the civil employments of the government, and professors in the universities, all young men, between the ages of 18 and 26, are liable to be drawn for military service, and, when drawn, must serve. The standing army is drawn only from those between 20 and 25; but volunteers may enter at 17, may choose the corps in which they wish to serve; and, upon condition of equipping themselves, are exempted from more than one year's service. The others do duty with the standing army for three years; for two years more they belong to the war reserve, and then pass into the landwehr, unless they choose to enrol themselves for a further limited period, which insures them an increase of pay, and a preference in civil appointments. As, however, only from 25,000 to 30,000 recruits are required each year to supply the place of those whose service expires, the rest of the men of the requisite age pass at once into the landwehr, in which they continue till the age of 32. Thus is formed the first call of the landwehr, which is assembled for exercise twice a-year, and, in war, forms part of the active army. The second call of the landwehr consists of all those between 32 and 39, who have previously served. These are seldom under exercise: and, in case of war, they would be employed in garrisoning the fortified places. The landsturm comprises all men between 17 and 50; they are liable to be called on in time of peace to preserve the public order, or in war for the defence of the country. The landwehr regiments are respectively attached to the regiments of the line, which are aways quartered in the same provinces. The army is divided into 9 corps d'armee, one of guards, and 8 of the line.

Except when a youth is attached to the artillery, in which the term of service extends to five years, three years constitute the limit of service in the regular army, and that is almost always curtailed, on the plea of furlough, to two; and, in the cases of nobles, it never exceeds one year as a private soldier. But still all continue liable to serve in the landwehr and landsturm; and thus, from the commencement of his manhood till its vigour forsake him, every Prussian is liable to military service, though, except in time of war, the period is too short to be complained of as a hardship. Promotion to the highest rank is open to all, but the candidates undergo strict

examination as to their qualifications. Soldiers who are maimed or severely wounded are admitted into the hospitals at Berlin, Stolpe, and other places, or into one of the 24 invalid companies, and receive board, lodging, clothes, and medical attendance. Those who are less severely wounded, or who are rendered by military service incapable of earning their livelihood, receive pensions according to circumstances. To the military establishments belong the institutions for the education of the children of soldiers at Stralsund and Annaburg, and the military orphan hospital at Potsdam, where the orphans of soldiers are maintained and educated.

The principal fortresses are: — *Kustrin* and *Spandau*, in Brandenburg; *Glatz*, *Glogau*, *Schweidnitz*, *Neisse*, *Silberberg*, and *Kosel*, in Silesia; *Graudenz*, *Pillau*, *Thorn*, *Danzig*, with *Weischselmunde*, in Prussia; *Posen*; *Colberg* and *Stettin*, in Pomerania; *Magdeburg*, *Wittenberg*, *Torgau*, and *Erfurt*, in Saxony; *Minden* in Westphalia; *Wesel*, *Cologne*, *Juliers*, *Saar-louis* *Coblenz*, and *Ehrenbreitstein*, in the Rhenish provinces. The King of Prussia likewise has the right of furnishing a part of the garrison of *Luxemburg*, in common with the King of Holland; and of the garrison of *Mentz*, with the Emperor of Austria.

PRODUCTIVE INDUSTRY. — 1. Agriculture; 2. Mines; 3. Manufactures; 4. Commerce.

§ 1. *Agriculture.*

The cultivation of the soil is the employment of three-fourths of the inhabitants of the kingdom; and in the course of the last century the industry of the agriculturist has changed the most barren and unproductive portion of Europe into a territory which not only supplies the wants of its own inhabitants, but generally leaves a surplus of corn for exportation. In Prussia and Pomerania four-fifths of the people subsist wholly by agriculture. But all the operations of the former are performed in a slovenly and indolent manner, with rude and clumsy instruments; and the extent of land sown with wheat does not amount to one-tenth of that on which rye is grown. In Brandenburg the soil is unproductive; but the cultivators are industrious, and, since the encouragement given to agriculture by Frederick the Great, uncultivated lands have been covered with harvests, thick forests have been supplanted by rich meadows, many unwholesome marshes have been drained, and the value of land has risen. In Silesia the crops are inadequate to the supply of the population, and grain is imported into that province from Austria and Poland. The principal kinds of grain produced are wheat, rye, barley, and oats; but the quantity of rye far exceeds that of every other, and forms the principal food of the people. Pease, beans, and buck wheat are also raised, and in some places, especially in Brandenburg, an article of food is collected from the seeds of the festuca fluitans. The cultivation of potatoes has been for many years gradually extending, and has already become so great as to supply nearly the entire food of a very great proportion of the labouring population. Besides articles of food the soil also produces many for trade and manufactures. The principal of these is flax, which is grown in every village, and almost by every peasant; and the quantity annually brought to market is very considerable, two thirds of that quantity being produced in Silesia alone. Thread is also made from felwort, a plant of which the cultivation is rapidly extending. Tobacco, madder, woad, safflower, and hops are cultivated on a small scale; chicorum or succory is much used as a substitute for coffee, and is cultivated very largely in many districts. The making of sugar from beet-root has also become an important branch of industry, and large quantities are grown for that purpose. Wine of excellent flavour and strength is produced in the Rhenish provinces; inferior kinds are produced in Posen, Silesia, Brandenburg, and Saxony. Wines are liable to six rates of excise duty, according to quality; and it appears that those bearing the highest three rates are produced in the Rhenish provinces; that Silesia, Brandenburg, and Saxony produce only the lowest three qualities; and Posen the lowest only. The total quantity of wine produced in 1835 amounted to 14,561,511 gallons, nearly three times the amount produced in 1832. The culture of esculent vegetables, such as cabbages, turnips, carrots, pease, and beans, has been carried to a great degree of perfection. The silk raised in Silesia and some other places is too inconsiderable in quantity to be of much value; but the silk-worm succeeds well in Brandenburg, and the quantity of silk produced there is very considerable. The most productive branch of rural economy, next to corn, is that of breeding and fattening cattle; though the stock is very indifferent, and the number bears but a small proportion to the extent of land. The sheep generally are bad, but of late years very great improvements have been made in their fleeces by the introduction of Merino and Paduan rams. The total number of sheep

in 1834 was 12,632,277, and of these 2,831,553 were merinos and whole bred. The merinos are now sufficiently numerous to supply the manufacturers with the raw material which used formerly to be furnished principally from Spain. The horses are not good, though great efforts have been made by the Government to improve them, and studs are established for this purpose in several parts of the kingdom. The breeding of swine is a very considerable employment, and the hams, bacon, and sausages made from them, form a large proportion of the animal food of the inhabitants. The rural economy of Prussia, like that of most parts of the continent, is deficient in the proportion of land allotted to pasture. Hence the number of cattle is relatively small; and the effect of the want of manure is shewn in the small increase upon the crops of grain. The average increase is stated to be 6 for 1 of wheat, $5\frac{3}{4}$ for 1 of barley, 4 for 1 of rye, and $4\frac{1}{2}$ for 1 of oats. The land of the kingdom is thus appropriated:—

Ploughed land,	29,224,741
In garden culture,	295,302
Vineyards,	40,05.
Meadow and pasture land,	14,672,000
Woods, forests, and plantations,	17,574,294
Total, English acres,	61,806,388

The remainder of the country, amounting to about 12,000,000 acres, is occupied by lakes, rivers, ponds, canals, marshes, roads, the sites of cities, towns, and villages, and sterile tracts unfit for cultivation.

§ 2. *Mines and Minerals.*

The mines are not worked to the extent of which they are capable. The provinces which produce iron are Brandenburg, Silesia, Saxony, Westphalia, and those on the Rhine. The iron is smelted in the vicinity of the mines, generally with charcoal, but in some places with fossil coal; but little or no iron is exported. The mines of rock salt, and the salt springs, which are found in Brandenburg, Thuringia in Saxony, Westphalia and the Rhenish provinces, supply the consumption of their vicinity, but the Baltic provinces find it more advantageous to import salt from England. Coals are found in Silesia, Saxony, Westphalia, and Brandenburg, but the mines are not extensively worked, the use of coal being much limited by the want of means of conveyance. Gold exists in Silesia, but the mines were found to be unprofitable, and they have therefore been abandoned since 1798. There are silver mines at Tarnowitz and Rudelstadt in Silesia, and at Mansfeld and Rothenburg in Saxony. In Tarnowitz there is also an extensive and valuable mine of lead, which contains silver. Silesia also produces slates, mill-stones, marble, serpentine, porphyry, rock-crystal, jasper, carnelians, onyx, agates, and chrysoprasus. The other minerals of Prussia are copper and cobalt in Silesia, Lower Thuringia, and the Rhenish provinces; calamine and arsenic in Silesia; alum in Brandenburg, Thuringia, and the Rhine; vitriol and saltpetre in Silesia, Thuringia, and the Rhine; but enough of these articles is not produced even for home consumption. Amber is almost exclusively the production of Prussia proper, where it is found in mines, and is also thrown up by the sea upon the coasts, which are strictly watched, and the produce farmed from Government. Its value at present is much less than it was in ancient times; but workmen are still employed in some places in making it into jewels, scented powder, spirituous acid, and a fine oil, which is used as a varnish. Part of the raw material is exported by Danes and Italians, but Turkey is the principal market, the Turks using it to a great extent for mouthpieces to their tobacco-pipes. The quantity produced annually is more than 200 tons, and the revenue which Government derives from it is from £3000 to £4000 sterling. The quantities of other minerals produced in the year 1835, were:—Silver, 23,178 marks, equal to £46,974; copper, 16,803 English tons; pig-lead, 22,519 do.; litharge, 4703 do.; black-lead, 43,526 do.; zinc, 186,748 do.; ore of cobalt, 992 do.; ore of antimony, 4601 do.; manganese, 2533 do.; arsenic, 3447 do.; iron, 1,675,439 do.; sulphur, 1157 do.; bituminous coal, 8,558,201 Prussian tons; Anthracite coal, 2,338,232 do.; salt, 167,239 English tons; alum, 30,080 do.; vitriol, 39,263 do. In 1845, the mines and furnaces amounted to 5,768, yielding £1,661,764.

§ 3. *Manufactures.*

For a long period a system of domestic manufacture had prevailed, and still continues to a great extent, chiefly in the weaving of flax and wool. But of late years the introduction of machinery, and the erection of large establishments upon the same extensive scale as that adopted in Britain, have carried the production far beyond the demand for home consumption. Prussia and Saxony now export annually

a large quantity of manufactured stuffs. Weaving, and the preparation of yarn for the use of the looms, are the most important branches of manufacturing industry. Agricultural families frequently weave in the spring the yarn which they have spun during the winter; and the facilities which attend these branches of labour have led to the extensive adoption of them throughout the kingdom. Large quantities of linen and woollen yarn are annually produced by the hand; and in 1837 there were not less than 246,294 looms occasionally employed in the weaving of linen. Weaving, however, is almost entirely confined to four materials; flax, cotton, sheep's wool, and silk. According to the accounts made up to the end of the year 1845, there were in the whole kingdom, 136 cotton-mills, containing 150,436 spindles. In Saxony, at the same period, 133 mills, employing 12,606 hands. In 1837, 107 factories, containing 370,805 spindles. But, beside what is spun in the country, Prussia and the German States, import a large quantity of cotton twist, chiefly from Britain. Woollen yarn is spun partly in large establishments, but principally by small machines of 40 spindles; and the spinning of wool by the hand has now become so unprofitable that it must soon be relinquished. Prussia is chiefly supplied with wool from the produce of her own flocks; some foreign wool is imported, but a greater quantity of native growth is exported. The imported wool is of a coarse kind, chiefly from Poland; while, on the contrary, that exported consists principally of fine quality, which is shipped at Hamburg for England. The number of machines for spinning worsted and woollen yarn at the end of 1845 was 3946, containing 452,664 spindles. The number of flax-spinning factories was 17, containing 27,819 spindles. The manufacture of woollen is much less extensive than that of linen, but is on the increase. The increase of the silk manufacture has been very rapid since 1831; the number of looms employed that year was 8956, while in 1837 it had increased to 14,111. Knitting by the hand, which is practised by the labouring population as an occasional employment, and among the wealthier classes as an amusement, continues to supply a great part of the hosiery required, at so cheap a rate that no machinery can compete with it. The shearing and finishing of woollen cloths furnished employment, in 1837, to 3480 persons.*

The iron manufactures are more than sufficient for the home consumption. Berlin has become famous for ornamental works of that material. There are more than 300 paper-mills, which furnish the common kinds of paper in quantities sufficient for home consumption; but the finer sorts are still supplied from Britain or France. Leather is manufactured to the full extent of the demand, the deficiency of hides and skins produced in the country being supplied from abroad. Copper and brass wares for all domestic purposes are also made, partly from native copper and calamine, but chiefly with copper imported. Tobacco, snuff, sugar, soap, candles, cabinetware, earthenware, porcelain, tin goods, and almost every other article of common use, are made within the kingdom. The establishments for brewing and distilling are very numerous; the quantity of beer brewed in 1831, amounted to 59,410,800 gallons; and the quantity of material used in the manufacture of spirits, in that year, was 6,536,254 bushels of grain, and 19,830,700 bushels of potatoes. In the larger cities, the letter-founders, printers, engravers, musical, optical, and mathematical instrument makers, goldsmiths, silversmiths, jewellers, watchmakers, and other artificers, are as numerous and as skilful as in any other of the Continental States.

§ 4. *Commerce.*

The foreign commerce of Prussia is much less than the extent of the country and the number of inhabitants would lead us to expect; a result of the restrictions with which it is loaded. Prussia possesses no seaports except upon the Baltic, and as none even of these are calculated to receive ships of great draught of water, there is very little trade carried on by Prussians beyond the limits of Europe. The greater part of the exports are conveyed by foreign ships, of which the British exceed in number those of all other nations together. The principal ports are Danzig, Königsberg, Elbing, Memel, Stralsund, Colberg, Rugenwald, Stolpe, Barth, Swinemund, and Wolgast.

The commerce by land and by internal navigation is principally with Austria and Russia. From Austria the Prussians receive salt and wine, and send linen yarn in exchange. From Russia they import hemp, corn, hides, tallow, and other raw produce, and send in return both linen and woollen cloths. The provinces on the Rhine

* "Account of the recent Progress and present Extent of Manufactures of Prussia, &c. from German official Documents, by R. W. Rawson, Esq.," read to the Statistical Society of London, 18th March, 1839.

carry on very considerable traffic in wine and manufactured goods with Belgium, Holland, and the neighbouring German States. The principal articles of general export are:—grain, linen and thread, cloth, zinc, ironwork, copper and brasswork, porcelain, timber, cabinetwork, ironmongery, needles, arms, Prussian blue, tobacco, salt meat, wine, liqueurs, brandy, Cologne-water, wax, Westphalian hams, watches, carriages, musical instruments, and mathematical instruments. The principal articles of import are:—gold, mercury, tin sugar, coffee, tea, spices, and other colonial produce, French and Hungarian wines, cotton, silk, and leaf tobacco. The principal trading towns in the interior are:—Berlin, which is the centre of the commerce of the kingdom, and the seat of the great national bank; Elberfeld, the seat of the Rhenish West India Company, and the prineipal place for foreign trade; Breslau, the entrepot of the trade of Silesia, and Cologne, of that of the Rhine; Frankfort, on the Oder, Naumburg, Erfurt, Nordhausen, Aix-la-Chapelle, Coblenz, St. Goar, Remschied, Iserlohn, Soest, Bielefeld, Neuwied, Wesel, Duisburg, Hirsehberg, Lissa, Traustadt, Posen, and Thorn.—*See* GERMANY, § *Commerce*.

INTERNAL COMMUNICATION. — The roads throughout Prussia, as in the rest of Germany, were formerly very little calculated for carriage travelling; but of late years, excellent roads have been formed between the principal towns, though in the more remote districts they still remain little better than tracks. With respect to *canals* and *railways*, see these articles under GERMANY.

ADMINISTRATIVE DIVISIONS. — The kingdom contains 8 provinces, which are divided into 25 regierungsbezirke, or governments, subdivided into 328 circles. The names, extent, and population of the Provinces and Governments are exhibited in the following

TABLE of the PROVINCES and GOVERNMENTS, with their Area and Population in 1840.

Provinces, and Governments.	*Area in Square Miles.*	*Population in 1840.*	*Provinces, and Governments.*	*Area in Square Miles.*	*Population in 1840.*
BRANDENBURG,			PRUSSIA,		
Potsdam with Berlin,	8,128	1,087,231	Königsberg,	8,673	796,065
Frankfort,	7,405	769,866	Gumbinnen,	6,337	597,725
POMERANIA,			Danzig,	3,236	366,685
Stettin,	5,034	492.357	Marienwerder,	6,787	549,697
Köslin,	5 494	393,289	WESTPHALIA,		
Stralsund,	1,679	170,848	Munster,	2,809	411,249
SACHSEN, or SAXONY,			Minden,	2 033	441,736
Madgeburg,	5,273	628,695	Arnsberg,	2,977	530,212
Merseburg,	5,104	683,700	RHENISH PROVINCE,		
Erfurt,	5,324	324,826	Köln, or Cologne,	1,538	447,437
SCHLESIEN, or SILESIA,			Dusseldorf,	2,110	809,951
Breslau,	4,466	1,084,522	Coblenz,	2,330	478,430
Oppeln,	4,011	906,010	Trier, or Treves,	2,786	470,444
Liegnitz	1,312	868,288	Aachen, or Aix-la-Chapelle,	1,608	385,388
POSEN, or POSNANIA,					
Posen,	6,836	824,875			
Bromberg,	4,565	408,975		107,885	14,928,501

TOPOGRAPHY.—Commencing, as usual, with the capital of the kingdom, we shall then proeced to the provinces.

§ *The Metropolis.*

BERLIN is situate upon the banks of the Spree, in the midst of a sandy plain, 340 miles N.N.W. of Vienna, 265 N.E. by E. of Frankfort on the Main, and 160 nearly E.S.E. of Hamburg. The nucleus, or centre of the city, is formed by the old town, which is divided into three portions by two branches of the Spree, and surrounded by a ditch, which alone remains to mark the outline of its ramparts. On the east, north, and south sides, scattered suburbs extend to a considerable distanee, and on the west side a new town has been ereeted upon a regular plan, with long, straight, and spaeious streets, generally crossing each other at right angles, and terminated or interspersed with places, or open areas, of various forms. Nearly the whole mass of buildings which compose the city and suburbs, is now enclosed by a wall, in which there are 15 gates, some of which, particularly the Brandenburg gate, are highly ornamental structures. The houses are of moderate height, none exceeding three stories, and are built with just enough of uniformity to show variety of taste amidst general sameness. The principal street, named *Unter-den-linden* (Beneath the lime

bridge) to the Brandenburg gate, a distance of one mile and 320 yards, with a width of nearly 100 yards, divided into five roads by four rows of trees, and lined on each side by magnificent houses and public buildings. It is here that the splendour of the city is mostly concentrated; the rest of the streets are plain and without ornament; and even the places, though some of them contain fine buildings and statues, are mere sandy wastes, and have no inclosures within the line of their ill-paved streets. The centre of the city, the banks of the river, and the Unter-den-linden show some signs of life and even bustle, but the rest of the town displays little activity. The city, in short, was extended to its present dimensions, not to meet the wants of an increasing population, but to humour the taste or the caprice of Frederick the Great and his successors; and the population has therefore ample room, without crowding. The principal public buildings are: — The Schloss or Palace stands in the centre of the island formed by the Spree, and at the east end of the Unter-den-linden, but as a building, is more remarkable for its extent than for its elegance; the new museum built after a design of Schinkel's in 1830; the Egyptian museum; the arsenal; the porcelain manufactory; the royal library; the university; the theatre; opera-house; cathedral, Catholic church; the iron foundry; and the Brandenburg gate, at the west end of the Unter-den-linden, consisting of a much admired pile of Grecian columns, and lodges, built in imitation of the Propylœa of the Athenian acropolis, and surmounted by a bronze figure of Victory in a quadriga. Berlin contains a great number of scientific and literary establishments, the principal of which are: — the University, which ranks among the first in Europe; the military school; the military academy of surgery and medicine; the theological and philological seminary; the school of artillery and engineers; the school of mineralogy; the royal veterinary school; the school of arts; the school of the fine arts; the singing school; the deaf-and-dumb school; the royal academy of sciences; the academies of the fine arts, mechanical sciences, and architecture; societies of natural history, medicine, surgery, physic, pharmacy, medicine, geography, horticulture, and many others. It possesses also a fine botanic garden, an observatory, and several fine libraries, the principal of which is the royal library, one of the richest and most extensive collections in Europe. In November 1838, the population of the city and suburbs, exclusive of the garrison, amounted to 272,484. In 1838, the number of births was 9409, and of deaths 8649; the number of marriages 2753, and of illegitimate births 1206.

§ *Province of Brandenburg.**

1. *Government of Potsdam.* — Berlin, 247,336; Potsdam, 24,184; Brandenburg, 12,865; Prenzlau, 10,266; New Ruppin, 7415; Charlottenburg, 6081; Wittstock, 5866; Spandau, 5736; Schwedt, 5616; Wriszen, 5274; Rathenow, 5030; Stralau, Schoneberg, Rudersdorf, Franzosisch-Bucholz, Schönhausen, Oranienburg, Tegel, Kopnick, Stranssberg, Liebenwalde, Rathenau, Trauenbriezen, Luckenwald, Wrietzen, Neustadt-Eberswald, Freienwald, Neustadt, Reinsberg, Perleberg, Havelberg, Templin, Strassburg, Neu-Angermunde, Belzig, Jnterbock, Dahme.

Potsdam, 18 miles S.W. of Berlin, is a large and fine, but desolate town, on the banks of the Havel, where the water of that river, which is dammed up, forms a spacious artificial lake. It is indeed, as a late traveller remarks, but a huge barrack, and there seems to be no living creature in the town except the soldiery. Yet Potsdam is one of the most interesting places in the kingdom; for it contains the palace and the tomb of Frederick the Great, whose spirit seems diffused over everything within it and around it. The tomb is a plain sarcophagus in the garrison church, overshadowed with the flags and eagles taken from the French in the late war. In the environs are the royal residences of Sans Souci, the new palace, and the marble palace. In the middle of the lake is the Pfaueninsel (Peacock island) the favourite summer retreat of the late King, said to be, at that season, a most lovely spot; and around it are artificial hills and valleys, adorned with groves and fine buildings, forming altogether a strange and delightful contrast to the sandy plain which surrounds it. *Brandenburg*, 35 miles W. of Berlin, on the Havel, is an old town, with an ancient cathedral; its inhabitants are occupied in cotton, woollen, linen, and leather works, brewing and distilling. *Spandau*, 10 miles W. of Berlin, the state prison of Prussia, is a strongly fortified town at the junction of the Spree and the Havel, which, in case of a siege, may be made to overflow the country, and cover the fortress from attack. Between Spandau and Berlin is the small town of *Charlottenburg*, which contains a fine royal palace, and, in a retired part of its garden, the exquisite monument of the late queen, Louisa. *Neustadt-Eberswald*, a busy town, with mineral waters, is the seat of the royal forest academy and institute; near it is the royal copper and zinc foundry, and at the village of *Eggermuhl*, the royal brass foundry. *Neustadt-an-der-dosse* contains a royal stud, and glassworks, and the metallurgic establishment of Hohenofen, where copper and silver are separated. *Prenzlau* or *Prenzlow*, 60 miles N. of Berlin, is noted for its vapour baths.

2. *Government of Frankfort.*—Frankfort on the Oder, 22,325; Landsberg on the Warta, 9981; Guben, 8786; Kottbus, 8020; Kustrin, 5240; Konigsberg (Neu-mark), 5018; Mullrose, Furstenwald, Beeskow, Cressen, Zullichau, Wietze, Friedberg, Soldin, Neuenzell, Sorau, Friedrichsthal, Lubben, Luckau.

Frankfort, on the left bank of the Oder, 56 miles E. of Berlin, is a fine small city, with an industrious and commercial population, whose traffic is greatly promoted by three annual fairs, and by the canals which connect the Oder with the Vistula and the Elbe. In the neighbourhood are fine baths supplied by a mineral spring, discovered in 1821. *Kustrin* is an important fortress on the Oder, 18 miles below Frankfort, at the confluence of the Oder and Warta.

* The figures attached to the names are the amount of the population in 1834.

§ *Pomerania.*

1. *Government of Stettin.*—Stettin, 29,042: Stargard, 9989; Anklam, 7034; Pasewalk, 5381; Demmin, 5318; Golnow, Griefenhagen, Treptow, Unkermunde, Swinemunde, Wollin.

Stettin is a fine fortified town on the Oder, the capital of the province of Pomerania, 86 miles N.N.E. of Berlin. The royal castle and Landsebafthaus (hall of the States) are its principal public buildings. It contains a gymnasium, a seminary for schoolmasters, a high-school, a school of navigation, the Pomeranian society for natural history and antiquities, and a considerable library in the State house. It is a busy commercial town, and one of the principal seaports. *Dam*, on the east bank of the river, is also strongly fortified in connexion with Stettin. *Swinemunde*, on the isle of Usedom, at the mouth of the Swine, one of the outlets of the Stettiner-haf, a well frequented sea-bathing place, with a tolerable harbour, lately much improved, is regarded as the port of Stettin.—Population 3600. *Anklam* is also a considerable trading town, near the west end of the Stettiner-haf.

2. *Government of Stralsund.*—Stralsund, 14,713; Greifswald, 9498; Barth, 3800; Wolgast, 4000; Bergen in Rugen; Puttbus, Arkona.

Stralsund, 125 miles N. of Berlin, is a strong, busy, and commercial town, on the west side of the strait of Gellen, which separates it from the isle of Rugen. *Griefswald*, is a small commercial town, with a university, a rich library, a cabinet of natural history, a botanic garden, an observatory, and other scientific and literary establishments. *Wolgast*, a small seaport town, with 4000 inhabitants, on the west side of a strait formed by the isle of Usedom. *Puttbus* is noted for the fine castle of the Prince von Puttbus, which contains a collection of national antiquities, and Etruscan vases, and a picture gallery. Near *Arkona*, the most northerly point of Germany, is a good lighthouse, and the remains of an ancient Slavonic fortress, of which this cape preserves the name.

3. *Government of Köslin.*—Köslin, 6699; Kolberg, 7321; Stolpe, 6983; Neu-Stettin, Rugenwald.

Köslin, *Cöslin*, or *Coeslin*, is a small industrious town, and the capital of the government. *Kolberg*, or *Colberg*, a fortified commercial town on the river Persante, which forms its harbour, not far from the Baltic.

§ *Saxony* or *Sachsen.*

1. *Government of Magdeburg.*—Magdeburg, 40,417; Halberstadt, 16,455; Burg, 13,117; Quedlinburg, 12,548; Aschersleben, 9433; Salzwedel, 6966; Schönebeck, 6968; Neustadt-Magdeburg, 6139; Stendal, 6109; Grossalza, Barby, Calbe, Stassfurt, Alt-Haldensleben, Hundisburg, Neu-Haldensleben, Tangermunde, Gardeleben, Oschersleben, Ströbeck, Thale, Wernigerode, Ilsenburg, Schierke.

Magdeburg, an old-fashioned town on the left bank of the Elbe, 75 miles W.S.W. of Berlin, is the citadel of Prussia, and one of the strongest fortresses in Europe. Its principal public building is the dom-kirche, or cathedral. It is an industrious and commercial town, and has several of the usual scientific and literary establishments, with a garrison of 5000 men. It has two suburbs, *Neustadt*, on the north, and *Sudenburg* on the south. *Schönebeck*, on the Elbe, 12 miles S.E., is noted for its great chemical work, where 200 different articles are prepared, and its great salt work, where 1000 workmen are employed. *Burg* is noted for its manufacture of clocks, and a fine house of education for the poor. *Halberstadt*, on the Holzemme, 30 miles S.W. of Magdeburg, a large commercial town, with a superb cathedral, a gymnasium, a seminary for schoolmasters, and a midwifery school. *Quedlinburg*, 10 miles S. of Halberstadt, is a busy town, with a gymnasium, a deaf-and-dumb institution, and mineral springs. *Wernigerode*, 15 miles W. by S. of Halberstadt, a town of 5000 inhabitants, has a fine castle of the mediatized Count von Wernigerode, with a rich library and a cabinet of natural history.

2. *Government of Merseburg.*—Halle or Saale, 25,200; Naumburg, 11,591; Zeitz, 8929; Merseburg, 8753; Wittenberg, 8107; Weissenfells, 7299; Eilenburg, 7175; Eisleben, 7143; Torgau, 6480; Sangershausen, 5133; Lutzen, Durrenberg, Lauchstadt, Kösen, Giebchenstein, Pforta, Rosbach, Mansfeld, Siebegerode, Hettstadt, Wettin, Lobejun, Langenbogen, Rothenburg, Prettin, Duben, Muckenberg, Lauchhammer, Stolberg, Rossla.

Halle, the capital of the government, is an old-fashioned town, near the right bank of the Saale, 88 miles S.W. of Berlin, and 8 miles W.N.W. of Dresden. It is a busy commercial town, and particularly noted for the activity of its printing presses; the seat of a University, one of the most celebrated in Europe, with a museum and fine library, and numerous other scientific and literary institutions. *Naumburg*, on the Saale, 25 miles S. of Halle, is a large commercial town, near which is *Pforta* or *Schulpforta*, celebrated through all Germany for its college, one of the oldest in Europe, where Klopstock, Wolf, and other eminent men were educated. To the S.W. of Naumburg, on the road to Weimar, is the *defile of Kösen*, so memorable in the wars of 1806 and 1813. At Kösen are salt-water baths, which have been frequented, from time immemorial, for the cure of diseases. At the distance of 8 and 18 miles N.E. of Naumburg are *Weissenfels*, a pretty town on the top of a steep hill, with a bridge over the Saale, and an old ducal castle; and *Lutzen*, near which were fought two great battles; the one in 1632, in which Gustavus Adolphus, King of Sweden, the great champion of Protestantism, was killed; and the other in 1813, when the Russo-Prussian armies were defeated by Napoleon. The place where Gustavus' body was found is marked by a simple stone, called his *denkmal*, which is much venerated. About 8 miles W. of Lutzen is *Rosbach*, where Frederick the Great, King of Prussia, defeated the combined armies of France and the Empire in 1757. Rosbach is also noted for its coal-mines. *Eisleben*, 20 miles W. of Halle, is noted as the birth-place of Luther, and for its copper-mines and foundries. *Wettin*, on the Saale, a small town with 2800 inhabitants, is noted for its coal-mines, particularly those of *Lobepin* and *Langenbogen*. The village of *Rothenburg* is also important for its copper-mines and quarries. *Merseburg*, 9 miles S. of Halle, has a fine cathedral which contains one of the largest organs in Germany; and near the town is a royal stud. *Durrenberg*, a village near Merseburg, noted for its salt-works. *Wittenberg*, a fortified town on the Elbe, over which it has a great bridge, 54 miles S.W. of Berlin. In its castle church are the tombs of Luther and Melanchthon; and in the market-place, a colossal bronze statue of Luther. *Torgau*, a fortified town on the Elbe, 48 miles N.W. of Dresden. *Lauchhammer*, a large foundry, near Muckenburg, employs 300 workmen, and produces fine cast-iron articles. *Stolberg*, a small town with 2200 inhabitants, situate in the Harz, contains the fine castle of Count Stolberg, with a rich library and a large park, 52 miles S.W. of Magdeburg.

3. *Government of Erfurt.*—Erfurt, 23,396; Muhlhausen, 11,491; Nordhausen, 11,023; Suhl, 7118; Langensalza, 6052; Schleusingen, Heiligenstadt, Ellrich, Beneckenstein, Trefurt, Gross-Sommern or Sommerda.

Erfurt, on the Gera, an old-fashioned but well-built fortified city, with a strong garrison, 86 miles S.S.W. of Magdeburg, and 15 W. of Weimar, is a busy commercial place, situate in a rich country, and contains a Catholic gymnasium, an evangelical gymnasium, a deaf-and-dumb, and other institutions. *Suhla* or *Suhl*, a small town on the Lauter, in the canton of Thuringerwald, entirely separated from the rest of the Prussian territory, 26 miles S.W. of Erfurt, carries on an extensive trade; and near it is *Schleusingen*, which has a gymnasium, a copper-foundry, and 2500 inhabitants.

§ *Silesia* or *Schlesien.*

1. *Government of Breslau.*—Breslau, 86,052; Brieg, 10,645; Schweidnitz, 9323; Glatz, 6644; Oels, 5837; Frankenstein, 5493.

Breslau, on the Oder, 190 miles S.E. of Berlin, is a large old-fashioned town, with narrow streets and high houses surmounted with curious turrets. Its commerce is extensive, its garrison formidable, and its fortifications are kept in excellent order. It contains a University, with a number of other scientific and literary institutions. *Oels*, 16 miles N.W. of Breslau, is the capital of the principality of Oels, belonging to the Duke of Brunswick, and has a celebrated gymnasium, and a fine ducal castle with a rich library. *Bielau*, near Richenbach, 30 miles S.S.W. of Breslau, is the largest village in the kingdom, and is noted for the industry of its inhabitants, who amount to 8000. *Peterswalda*, another large village, not less industrious, contains 4200 inhabitants. *Glatz*, on the Neisse, a fortified town, 50 miles S.S.W. of Breslau.

2. *Government of Oppeln.*—Neisse, 10,152; Oppeln, 6496; Ratibor, 6288; Leobschutz, 5491; Gleiwitz, 5277; Neustadt, 4800; Pless, 2200; Beuthen, 3000; Tarnowitz, 2800.

Except *Neisse*, which is a fortified town at the confluence of the Biela with the Neisse, 48 miles S. by E. of Breslau, the government contains no other place of much importance. We may mention, however, the fortress of *Silberberg*, on the top of a hill, 15 miles N. of Glatz, the works of which are cut out of the rock, with three ranges of casemates capable of lodging 5000 men; *Wartha*, 9 miles N.E. of Glatz, a place of 900 inhabitants, and a church of St. Mary, which is visited yearly by a great number of pilgrims; and *Reichenstein*, at the foot of the Jaucrsberg, 14 miles E. of Glatz, noted for its rich mine of arsenic.

3. *Government of Liegnitz.*—Görlitz, 12,332; Gross-Glogau, 11,430; Liegnitz, 10,733; Grunberg, 9351; Goldberg, 6762; Hirschberg, 6648; Jauer, 5730; Sagan, 5467; Lauban, 5240; Warmbrunn.

Liegnitz, the capital, is a large commercial town, near the confluence of the Schwarzwald with the Katzbach, 42 miles W. of Breslau, with a royal college, gymnasium, library, &c. *Görlitz*, a commercial town, 93 miles W. of Breslau, and 120 S.E. of Berlin, is the seat of the scientific society of Upper Lusatia, with a fine library and museum; and contains also other societies. Its church of St. Peter and St. Paul is noted for its large and fine organs and enormous bell. N.N.W. 30 miles from Gorlitz is the castle and park of Muskau, belonging to the eccentric Prince Puckler-Muskau. *Gross-Glogau*, on the Oder, 136 miles N.E. of Berlin, is a large fortified commercial town with a population, including the garrison, of 15,000. *Warmbrunn* (Hotspring) near Hirschberg, 33 miles S.W. of Liegnitz, is a small town with 1900 inhabitants, but much frequented for the sake of its warm baths.

§ *Province of Posen.*

1. *Government of Posen.*—Posen, 31,249; Lissa, 8631; Rawitsch, 8017; Knotoschin, 6635; Kempen, 6206; Fraustadt, 6064. 2. *Government of Bromberg.*—Bromberg, 7119; Gnesen, 5427.

Posen or *Posnan*, formerly the capital of Great Poland, is a large and flourishing commercial city upon the Wartha, 160 miles E. of Berlin. It is the see of a Roman Catholic archbishop, who bears the title of Posen and Gnesen; has three yearly fairs, and is in the course of being strongly fortified. *Gnesen*, 30 miles E. of Posen, is considered to be the oldest town in Poland. It is, however, ill-built; but has a well-frequented yearly fair. The other towns are occupied by an industrious population, but are otherwise unimportant.

§ *Province of Prussia Proper.*

1. *Government of Königsberg.*—Königsberg, 63,064; Memel, 7934; Braunsberg, 7516; Pillau, 4000, Tapiau, 3000; Wehlau, 3100; Labiau, 3300; Preussisch-Eylau, 2100; Frauenberg, 2000; Heilsberg, 4100; Morungen, 2400; Rastenburg, 3800. 2. *Government of Gumbinnen.*—Tilsitt, 11,564; Insterburg, 7840; Gumbinnen, 6122; Lyk, 3300. 3. *Government of Danzig.*—Danzig, 53,808; Elbing, 17,857; Marienburg, 5594; Stargard, 3000. 4. *Government of Marienwerder.*—Marienwerder, 5246; Thorn, 8195; Kulm, 5201; Graudenz, 5182; Konitz, 2700.

KÖNIGSBERG, the capital of Prussia proper, is situate upon the Pregel, not far from its mouth in the Frische-haf, 350 miles N.E. of Berlin. The town is large and regularly built, but old fashioned; and is the seat of a University, with a celebrated observatory, and numerous other scientific and literary establishments. It carries on a considerable trade, through *Pillau*, which may be considered its port, being situate at the entrance of the Frische-haf, where all the vessels which are too large to go up to Königsberg stop. Adjoining Pillau is a fortress of a pentagon form, with defences so constructed as to bring the cannon to bear particularly upon the Gatt, or entrance to the bay. It is of great strength on the side next the sea, while it does not admit of being assailed on the land side. *Preussisch-Eylau*, 23 miles S. by E., and *Friedland*, 28 miles S.E. from Königsberg, are famous for two sanguinary battles fought there between the French and the Russo-Prussians in 1807. *Memel*, 74 miles N. by E. of Königsberg, is a flourishing sea-port town, at the entrance of the Curische-haf, the principal trade of which is in timber and grain. *Frauenburg*, a small but picturesque town, 8 miles W. of Braunsberg, on the Frische-haf, contains the cathedral of the bishopric of Ermeland, in which the tomb of Copernicus, who died in 1543, is still shown. *Tilsitt*, at the confluence of the Tilse with the Memel, is a busy commercial town, noted for the peace contracted here in 1807 between the Emperors of France and Russia.

Danzig (*Dantzick* of the English, *Dantsick* of the French, and *Gdansk* of the Poles) stands in a fine situation, on the left bank of the most westerly branch of the Vistula, near the sea. It is an ancient city, and, till 1795, was a free town governed by its own laws and magistrates, under the protection and sovereignty of the kingdom of Poland. The town is old fashioned and ill built; but from it situation at the mouth of a large navigable river, it enjoys a considerable trade in exporting the raw produce of Poland. It is surrounded with strong fortifications 2¾ miles in circuit, and has 4 gates, 19 bastions, and forts or redoubts on the Hail Stolpen and Bishop's Mounts adjoining; and the low ground in which it is situate presents great difficulties to the approach of an enemy. It has endured several memorable sieges. *Neufahrwasser*, a small town of 1400 inhabitants, is the port of Danzig, and is protected by the fortress of *Weichselmunde*. *Ohra*, a fine village with 2700 inhabitants, situate on the Radaune, is adorned with several fine villas of the wealthy Danzigers; and *Zoppot*, with 350 inhabitants, is their sea-bathing place. *Oliva*, a small town of 1300 inhabitants, on the coast, N.W. of the city, is also the resort of the wealthy citizens. In the middle of the gulf, 20 miles N. of the mouth of the river, is a small town and lighthouse of *Hela*, at the end of a long narrow tongue of land. *Elbing*, 40 miles E. by S. of Danzig, upon the small river Elbing, the outlet of the lake of Drausen, is also a large commercial town, connected by canals with the Frische-haf and the Nogat. *Marienburg*, upon the Nogat, contains the magnificent castle which was formerly the residence of the grand-masters of the Teutonic order. *Graudenz*, 60 miles S. of Danzig, on the right bank of the Vistula, where the river is 2700 feet wide, has a large and strong citadel, built upon a hill, the object of constructing which was to command the opposite bank and the navigation of the river. *Kulm* or *Culm*, 15 miles S. by W., has a college for cadets. *Thorn*, a very strong town on the Vistula, celebrated for industry and commerce, with a garrison of 3000 men, and noted as the birthplace of Copernicus, 230 miles E. by N. of Berlin, and 92 S. of Danzig. It has a wooden bridge 2500 feet long, which is divided in the middle by an island.

§ *Province of Westphalia.*

1. *Government of Munster.* — Munster, 18,605; Warendorf, 3900; Steinfurt, 2300; Dulmen, 2200; Koesfeld, 3000; Rheina, 2500; Bocholt, 4200; Recklinghausen, 2300. 2. *Government of Minden.* — Minden, 7785; Paderborn, 7639; Herford, 6640; Bielefeld, 5874. 3. *Government of Arensburg.* — Iserlohn, 8095; Soest, 7854; Dortmund, 6360; Hamm, 5167; Arensburg, 3200; Altena, 3700; Hagen, 3900; Unna, 4000; Schwelm, 3000; Werl, 2800; Brilon, 2800; Siegen, 4000; Horde, 1200.

Munster, on the Aa, not far from the Ems, formerly the capital of a sovereign bishop, and now the chief city of the province of Westphalia, is a well-built, busy, and commercial town, the see of a Catholic bishop, and the site of several scientific and literary institutions. It was here that the peace of Westphalia was signed in 1648. *Minden*, on the Weser, over which it has a stone bridge, is a fortified commercial town, 40 miles W. of Hanover. In the immediate neighbourhood is the *Westphalische Pforte* (Westphalian gate), a pass formed by the near approach of the mountains Jakobsberg and Wittikindsberg, at the foot of the latter of which a stone obelisk has been erected to the memory of Wittikind, the chief or King of the Saxons, who was subdued by Charlemagne. *Paderborn*, the see of a Catholic bishop; and 10 miles E. of it is *Driburg*, a small town, famous for its mineral waters and fine baths. *Iserlohn* is noted for the immense quantity of articles of copper, brass, and iron, made in the neighbourhood, and for rich mines of calamine, at the distance of two miles. The other towns of the province are all celebrated for the industry of their inhabitants.

§ *Cleves-Berg, or the Rhenish Provinces.*

1. *Government of Cologne.* — Köln (Cologne), 62,181; Bonn, 12,512; Muhlheim, 4100; Selters; Popelsdorf, 850; Konigswinter, 1900; Siegberg, 2500; Zulpich, 1200. 2. *Government of Dusseldorf.* — Dusseldorf, 21.421; Barmen, 26,158; Elberfeld, 25,418; Krefeld, 20,673; Wesel, 10,145; Burtscheid; with Leichlingen, 10,071; Hohescheid, 9532; Neuss, 8193; Muhlheim-on-the-Ruhr, 7442; Cleve, 7190; Duisburg, 6091; Kronenburg, 5838; Lennep, 5826; Ronsdorf, 5807; Essen, 5571; Emmerich, 5518, Werden, 2900; Solingen, 3500; Lennep, 4500; Xanten or Santen, 3000; Ruhrort, 1700; Mors or Meurs, 3000; Geldern, 3600. 3. *Government of Coblenz.* — Coblenz and Ehrenbreitstein, 15,657; Kreuznach, 8081; Neuwied, 5635; Rhense, 1500; Wallendau, 2700; Bendorf, 1900; Andernach, 2700; Ober and Nieder Mendig; Laach; Boppard, 3700; Ober Wesel, 2300; Trarbach, 2400; Kochem, 2300; Mayen, 3600; Wetzlar, 4500; Dattenberg, 540. 4. *Government of Treves.*—Treves, 14,723; Saarbrücken, 7227; Neumagen, 1100; Wittlich, 2300; Berncastel, 2000; Saar-louis, 4400; Duttweiler, 1300; Sulzbach; Friedericksthal; Prum, 2100; Gerolstein, 700; Ehrang, 1000. 5. *Government of Aachen.* — Aachen, or Aix-la-Chapelle, 37,858; Eupen, 10,967; Duren, 7040; Burtscheid, 6467; Malmedy, 4100; Montschau or Montjoie, 3000; Ingenbruch, 800; Julich or Juliers, 2800.

Köln, or *Cologne* (the Roman *Colonia Agrippina*), is a large and very ancient city, on the left bank of the Rhine, in the S.W. angle formed by the crossing of 51° N. lat., and 7° E. long. It is about seven miles in circuit, surrounded with strong ramparts and towers, and is connected by a bridge of boats with *Deutz*, a small town on the right bank of the Rhine, which is also strongly fortified, and forms part of the system of the fortifications of the city. The streets of the city are narrow and crooked; the structure of most of the houses indicates great antiquity; and "altogether the town is a collection of dirty streets, lanes, and ill-arranged open places, jumbled together in a confused mass." (*W. Chambers.*) Its numerous population are devoted Catholics, and addicted to the grossest superstition and idolatry. The city contains many churches, which deserve particular attention on account of their beauty and antiquity; the principal of which is the cathedral, the most magnificent specimen of Gothic architecture in Germany, if not in Europe. The choir only is finished; but the King of Prussia has determined to complete the structure according to the original designs, which are still preserved. It contains a relic which is highly valued, in the skulls of the three Magi, or wise men of the East, who visited the infant Saviour at Bethlehem. They are decorated with gilt jewelled crowns, and their names are affixed in ruby characters. The church of St. Ursula is lined with the bones of 11,000 British virgins, who fled with that saint, and landing near the mouth of the Rhine, found their way to Cologne, where they preferred death to the dishonour which awaited them from the Pagan inhabitants. These and the other churches abound with similar emblems of superstition; but the church of St. Peter contains a splendid painting, by Rubens, of the crucifixion of that apostle, which is esteemed as one of the finest of his works. Cologne is noted for the manufacture of a kind of spirituous liquor named from it, of which a million of flasks are annually exported. The most celebrated makers bear the name of Farina; but there are several rival members of the family, each of whom boasts to be the only true one. Cologne has been declared a free port, and is calculated, from its situation, to be a great commercial emporium, if the inhabitants could only be induced to devote themselves to the active pursuits of trade. A railway has been commenced to connect Cologne with Belgium. Near the city is the abbey of *Altenberg*, noted for its church, which is considered one of the finest architectural structures in Germany.

Bonn, the seat of a university, and formerly of the Elector-Archbishop of Cologne, is a fine cleanly, compact town, on the left bank of the Rhine, 13 miles by land and 20 by water above Cologne. Its ancient minster or cathedral owes its origin to the Empress Helena; but has been rebuilt since her time; the present light and elegant Gothic structure bespeaks the style of the twelfth century. The fine and spacious electoral palace has been appropriated as a university for the Rhenish and Westphalian provinces; it stands upon elevated ground, enjoying a magnificent prospect, and is connected with the pretty village of Poppelsdorf by a shady avenue of chestnut trees, a mile in length, which forms the fashionable promenade of the inhabitants. In the immediate neighbourhood is the chateau of Clemensruhe, with a fine garden, lecture-rooms for the courses of mineralogy, botany, and zoology, the physical and chemical apparatus, the rich cabinet and library of natural history, and the botanic garden. *Liegberg*, with a fine church and an abbey, which has been converted into an asylum for idiots. Between Bonn and Coblenz, along the river, are several places of note; such as *Kreutzberg*, *Godesberg*, *Rolandseck*, *Oberwinter*, *Remagen*, *Sinzig*, *Breizig*, *Rheineck*, *Brohl*, *Weissenthurm*, on the left bank; *Drachenfels*, *Königswinter*, *Unkel*, *Erpel*, *Okenfels*, *Linz*, *Hammerstein*, *Sain*, on the right; and the islands of *Werth*, *Nonnenwerth*, *Graswerth*, *Niederwerth*, and others.

Dusseldorf, on the right bank of the Rhine, below Cologne, is a fine town, in a delightful situation, with a number of scientific and literary establishments and institutions; and within the circuit of a few miles are the flourishing manufacturing and commercial towns of *Elberfeld*, *Barmen*, *Remscheid*, *Krefeld*, *Solingen*, &c., of which Dusseldorf forms the shipping port and depot. The ramparts of Dusseldorf have been demolished, and converted into fine walks. Elberfeld, in particular, has grown very rapidly to its present extent and importance; and its merchants and manufacturers extend their enterprises to every part of the world. *Wesel*, a commercial town and free port on the Rhine, 35 miles below Dusseldorf, is strongly fortified, and has a garrison of 3000 men. *Duisburg*, also on the Rhine, a small town, formerly the seat of a university, now converted into a gymnasium. *Cleve* and *Geldern* are also industrious towns to the west of the Rhine. *Emmrich*, on the Rhine, a free port.

Coblenz (*Coblentz*), in a delightful situation at the confluence of the Moselle with the Rhine, is built upon a triangular point of ground formed by the two rivers. The town contains about 1200 houses, and is surrounded by very strong fortifications, which consist of four principal parts: 1. The works

immediately enclosing the town; 2 The *Carthaus*, now called the fort of the Emperor Alexander; 3. *Petersberg*, now called the fort of the Emperor Francis—all on the left bank of the Rhine; and 4. *Ehrenbreitstein*, or Fort Frederick William, on the right bank, occupying a hill, so completely fortified as to be deemed impregnable. The fort is connected with Coblenz by a bridge of boats, while the Moselle is crossed by a stone bridge. This system of fortifications is intended to form altogether an entrenched camp, capable of containing an army of 100,000 men; presenting a most formidable defence against the French, should they ever have another Napoleon to lead them forth to the conquest of Germany. The general appearance of Coblenz, as a town, is highly agreeable; the spacious places and streets, the handsome buildings which adorn them, the numerous churches, the shops, and the quays, make a pleasing impression on the traveller. At *Rhense*, or *Rhees*, a few miles S. of Coblenz, is the spot, still marked by stones, where formerly stood the König's Stuhl (King's seat), where the Electors of the Rhine used to meet to deliberate upon the affairs of the empire, and where several emperors have been chosen, and some dethroned—as was Wenceslas, in 1400.

Neuwied, on the right bank of the Rhine, below Coblenz, is a pretty little town, with a progymnasium, a seminary for schoolmasters, and a fine castle of the Prince of Wied, celebrated for its library, and fine collections of medals, Roman antiquities, and objects of natural history. The town is also noted for a number of silk works, cotton works, and the manufacture of cabinetwork, white-iron work, and ironmongery, most of which are carried on by Hernhutters. On the left bank of the Rhine, opposite Neuwied, is the monument erected by the French army of the Sambre and Meuse to their general, La Hoche, who died here in 1797. At *Engers*, S.E. of Neuwied, the remains of a Roman camp and other works have been discovered, supposed to belong to the ancient Victoria. *Andernach*, on the left of the Rhine, N.W. of Coblenz, has a considerable trade in millstones and trass dug out of the neighbouring quarries, and of excellent quality. The millstones are exported to Holland, Hamburg, England, Russia, and even America. Near Andernach are:—*Tönestein*, a small place celebrated for its mineral waters; *Ober Mendig* and *Nieder Mendig*, two large villages, where the millstones are procured; *Laach*, a small place, with a large abbey, on the banks of a lake which never freezes, and which occupies the crater of an extinct volcano. Nearly 20 miles S. of Coblenz, near St. Goar, is the *Lurley berg*, a precipitous rock on the right bank of the Rhine, noted for its echo, which repeats sounds distinctly three or four times, or even, as some allege, fifteen times. *Kreuznach*, on the Nahe, 43 miles S. of Coblenz, is a considerable town, with rich saltworks. The remaining towns in the government are:—*Ober Wesel*, on the Rhine, with an ancient church and slate quarries; *Trarbach*, on the Moselle, with mines of copper and lead, and quarries of slates; *Kochem*, near which are the baths of *Betrich*; *Mayen*, famous for millstones; *Dattenberg*, near which is *Alsauer*, where there are mines of argentiferous lead; *Boppard*, a small town on the Rhine; and *Wetzlar*, upon the Lahn, in a small detached territory surrounded by the possessions of Nassau and Darmstadt. Wetzlar was the seat of the Imperial Chamber, a court of appeal for the German empire, from 1693 to its dissolution, and possesses a fine cathedral. In its neighbourhood are about 300 small tombs, but no bones have been found in them.

Treves, or *Trier*, is a small city upon the Moselle, 63 miles S.W. of Coblenz. The city is very ancient, believed to be the oldest in Germany, and was formerly the see of an archbishop, who was one of the electors of the Holy Roman (German) empire. It is finely situate between two mountains covered with vineyards; contains many fine churches and palaces, a great collection of antiquities, and a fine stone bridge over the Moselle. It had also a university, for which a gymnasium has been substituted; it contains several other institutions, and a garrison of about 2000 men. *Gerolstein*, 43 miles W. by S. of Coblenz, a village at the foot of an extinct volcano, in the neighbourhood of which are extinct volcanoes, and mineral springs. *Saarbrucken*, 37 miles S.E. of Treves, is noted for its coal mines. *Saarlouis*, a few miles west, a small fortified town on the Saare, has mines of lead and iron in its neighbourhood. *Sulzbach* and *Fredericksthal*, noted for their glassworks; and *Dutweiller*, for its alumwork, and for a burning coal mine, which has been on fire for several years. *Wittlich*, a small town with mineral waters, 23 miles N.E. of Treves.

Aachen (*Aix-la-Chapelle* of the French), 40 miles W. of Cologne, an ancient imperial city, now the see of a bishop, and of a court of appeal, is situate in a valley nearly surrounded with hills; and has been long noted and much resorted to for its mineral waters. It consists of several respectable, with many dirty and confined streets; and several churches, which from their antiquity and various ornaments deserve to be visited; but the two most interesting buildings in the town are the town-house, and the cathedral, the latter of which, or at least a part of it, was built by Charlemagne, and contains his tomb; but his remains have disappeared. He was not buried, but placed in a white marble chair, with his imperial robes and crown, in the year 814. After a lapse of nearly two centuries, the vault which contained these precious relics was opened by the Emperor Otho III. who carried off the ensigns of royalty to be used at the coronation of the future emperors. It was opened a second time, in 1165, by the Emperor Frederick Barbarossa, who transferred the body to a splendid sarcophagus, and placed the chair in the church, where it is still preserved. The sarcophagus is now empty, and how or when it became so is not known; though a skull and an arm bone, reputed to be those of Charlemagne, are still remaining in the reliquary of the cathedral. From the time of the Emperor Louis I. to the year 1558, thirty-six kings of Germany* and ten queens were crowned at Aachen; and 17 diets and 10 synods have been held there. The waters of Aachen are sulphureous, warm, and nauseous; and one of the hottest of the springs is so abundant that the water cannot all be used for drinking and bathing, and is therefore allowed to escape for the benefit of the lower classes, who wash their clothes with it. Aachen is the only Prussian town in which gambling is licensed and allowed, and one of its gambling-houses, named the *new redoubt*, ranks as the most splendid and profligate of all the establishments of the kind on the continent. The city has been of late years much embellished; and besides several splendid hotels and gambling-houses, contains a superb bath-house, a new theatre, and several fine fountains. It is also the seat of flourishing manufactures of various kinds, to a considerable value annually; its needles are equal to the best English; its other articles of produce are cloth, linen, cotton, and indienne, horologerie, goldsmith work, and carriages. To the south of the city, in the bottom of a valley, is *Burtscheid*, a busy town, with very copious warm springs, which form a considerable stream, named the Hot Brook. This stream, at the distance of two miles, forms a pond, which never freezes, and contains various kinds of fish, carp, pike, tench, and others, which have so disagreeable a flavour that they cannot be eaten till after they have been kept several weeks in cool and pure water. The other principal places in this government are:—*Malmedy*, a flourishing town, with tanneries and other works, and a superb church; *Moresnet*, a small village, noted for rich mines of calamine; *Roggendorf*, another small village, beside the *Bleyberg*, which contains rich lead mines; *Durren*, a large town, with manufactures of ironmongery, nails, and paper; *Stollberg*, *Eschweiler*, and others, all noted for their manufacturing industry. *Jutich*, or *Juliers*, a small fortified town on the Roer, gave name to the late duchy of Juliers.

* Originally the Emperor was not properly Emperor of Germany, though usually so styled. He was King of Germany, and Emperor of the Holy Roman Empire; in which character it was that Charlemagne, Otho, and others, were crowned at Rome by the Pope. His title ran thus:—"Electus Romanorum Imperator semper Augustus, ac Germaniæ Rex," &c.

DENMARK.

ASTRONOMICAL POSITION. — Between 53° 20′ and 57° 44′ N. latitude, and 8° and 15° 28′ E. longitude.

DIMENSIONS. — Length, from the southern border of Lauenburg to the Skaw, 298 miles; and the greatest breadth, including intervening seas and islands, from the west border of Jütland to the eastern point of Meon, 180 miles; or, including Bornholm, 285. The superficial area of the kingdom is estimated at 21,887 square English miles.

BOUNDARIES.—*Northern :*—The Scaggerack and Cattegat. *Southern:*—The Elbe, and the territories of Hamburg, Lubeck, Hanover, and Mecklenburg. *Eastern :*—Baltic Sea, and the Sound. *Western :* — The North Sea or German Ocean.

GENERAL ASPECT. — Denmark is a portion of the great European plain, and may be characterised as almost uniformly level, with partial inequalities of surface, particularly in Holstein and Sleswick, where the elevation sometimes amounts to 1000 feet. There are hills also in the islands of Fünen and Zealand. The kingdom consists of two great divisions, the continental and the insular; the former being a long narrow peninsula, projected from Germany, and terminating in the Skaw; the latter comprising a number of islands between that peninsula, and the neighbouring kingdom of Sweden, separated from each other by several straits, which form the communication between the North Sea and the Baltic. The soil, even to a considerable depth, is composed of sand and clay; but in the Vindsyssel, in place of sand there are strata of peat or turf of great extent, which, on the borders of the sea, are covered with the moving sand of the downs. Along the western or oceanic coast of the peninsula, the surface is a continued level of marshland, protected from the sea by dikes, while the interior is dry and sandy. Lauenburg is an undulating plain, with few hills. Zealand, Fünen, and most of the other islands, present nearly the same appearance; though during summer vegetation succeeds surprisingly, and delights the eye with a fresh bright green. The most beautiful beechwoods, with fertile fields and luxuriant meadows, vary the scene; while numerous small lakes, and prospects of the sea, which burst on the sight, communicate life and variety to the landscape. Holstein, without ever reaching the picturesque, has a very pleasing character, consisting of gentle knolls, interspersed with small sheets of water. In general, however, there is little wood, but wherever it occurs, from its consisting chiefly of trees with glossy and luxuriant foliage, it tells well in the landscape. The aspect of the country in summer is singularly fresh and cheerful, and many spots might aspire to the character of pretty. The soil of the lowland is generally very fertile, producing the finest pasture and excellent corn crops. In the central parts of the duchy and in Jütland, the soil is arid, sandy, and barren.

GULFS, BAYS, AND STRAITS. — The Straits which divide the islands present a difficult navigation; and the shallows, rapid currents, and short and precipitous waves, concur to render the whole coast very dangerous, especially that of Jütland. The *Scaggerack* and the *Cattegat* separate Jütland from Norway and Sweden; the *Little Belt*, at one place very narrow, separates the Island of Fünen from Jütland and Schleswig; the *Great Belt* separates Fünen and Langeland from Zealand and Laaland; the *Sound* separates Zealand from Sweden. The Sound is almost the only one of these three Straits that is frequented by foreign ships; and every ship that passes through it pays toll to the King of Denmark. The frozen state of the Sound in 1830 suggested to the people of Elsinore to make an exact measurement of its breadth, when it was found to be 4328 yards at the narrowest part, viz. between the stone-halls on the Swedish side, and the extreme point of the fortress of Kroneberg on the Danish. But between the opposite harbours of Elsinore and Helsingborg the distance is 4602 yards. —*Edinburgh Journal of Nat. and Geog. Science*, II. 48, 1830. Bremner (*Excursions*, I. 267) says, "The width of this celebrated strait, at the narrowest point, is only about one mile and a half;" but 6665 Swedish ells are equal to 12,985 English feet, or only 215 feet less than *two* miles and a half. The water is not deep in every part. A sandbank opposite the castle renders it necessary for every ship to take a pilot; in which capacity a great part of the inhabitants of Elsinore are engaged. In 1839 the number of ships that passed the Sound was 16,209; being 2226 more than in 1838. The *Liimford* extends from the Cattegat nearly across the whole breadth of North Jütland, at first in a narrow stream, like a river or a wide canal, but afterwards expanding into a broad basin, divided by peninsulas and islands. It is separated from the North Sea only by a narrow belt of land, which was broken through by the waves in 1825; and the canal of Agger has since been formed at the breach, for the passage of vessels through the fiord.

CAPE. — The *Skaw* or *Scaggens odde*, at the extremity of Jutland.

ISLANDS.—1. *In the Baltic— Zealand; Fyen, Fionia*, or *Fünen; Alsen; Arroe; Tassing; Langeland; Laaland; Femern; Moen Amack; Samsoe; Anholt; Lessoe; Bornholm;* and many others. 2. *In the North Sea.— Fano, Romo, Silt, Fohr, Amron, Pelworm, Nordstrand*, and *Heligoland*. 3. The

Färoe islands, in the North Atlantic Ocean, belong to Denmark, and form one of the provinces of the kingdom. They are 22 in number, of which 17 are inhabited. They are situate between 61° 26′ and 62° 25′ N. lat., and 6° 17′ and 7° 43′ W. long. Most of them may be compared to the summits of mountain ridges rising out of the ocean, and generally running in a direction from north-west to south-east, attaining an elevation of nearly 3000 feet, and rising from deep water in perpendicular cliffs, 1200, 1500, and, in one instance, above 2000 feet high. The soil is principally composed of vegetable earth, mixed with the decomposed matter of the trap rocks of which these islands chiefly consist. Some of the mountains are covered with verdure, but most of them, towards their summit, produce only mosses and lichens. The climate is generally mild, but damp, with frequent fogs and stormy winds, though not very subject to rain. The extremes of heat and cold are seldom felt; the mean annual temperature of Thorshavn is 45.399°. The only corn generally cultivated is a hardy kind of barley (big), and even that does not always ripen. Oats and rye have been tried, but seldom with success; but turnips and potatoes thrive well. Frosts are not frequent, and seldom severe, but are occasionally of long duration. In the peat bogs are found the remains of birch trees, though none now grow in the islands. The flora contains 584 plants.*

RIVERS. — The *Eider* rises from a pond near Bordesholm in Holstein, runs through Lake Western, separates Schleswick from Holstein, and enters the North Sea below Tonningen. The *Delvenau*, *Alster*, *Bille*, and *Stor*, in Holstein, run into the Elbe. The *Trave* rises in Holstein, receives the *Stecknitz* from Lauenburg, and flows past Lubeck into the Baltic. The *Guden*, in North Jütland, runs into the Cattegat.

LAKES. — The kingdom contains more than 400 lakes, but they are mostly very small.

CLIMATE. — In the broadest part of the Danish peninsula there is no place more than 35 or 40 miles distant from the sea; whence it happens, that notwithstanding its situation in the northern part of the northern temperate zone, the climate is milder than its latitude would indicate. The prevalence of water covers the country with vapours and moist fogs, which, in summer, are usually dispersed by the winds which blow unobstructed by any hills. But under such a foggy sky spring does not appear with the charms which in finer climates announce its arrival; during that season the weather is by turns humid, tempestuous, or frosty. Summer, almost always very variable, lasts only from June to the middle of August, and even then the nights are invariably cool. Autumn is the finest of the seasons, but its duration is short. The cold weather returns in October, and November passes in cold rains and storms. Winter is subject to almost incessant snow or rain, especially in January and February, but the coasts are seldom covered with ice, though it has happened that the Sound has been frozen across. Generally speaking, the climate is not insalubrious.

VEGETATION.—The constant humidity of the atmosphere is favourable to vegetation; but the violence of the storms prevents the growth of forest trees. A wind from the north-west called Skai, which is most felt in May and June, withers the tops of the trees, while the west wind gives them a marked eastward inclination. Of the dark forests which once covered Jütland there now only remain long belts along its eastern side; Holstein has preserved only a few fragments in the middle of its heaths; but Lauenburg still contains the forest of Sachsenwald, formerly much more extensive. In these provinces the forests are composed of ash, alder, oak, and birch, especially the last; but the pine and the fir are rare. Fünen is dotted with small forests; Falster and the north-eastern part of Zealand contain several; in Bornholm are to be seen forests of birch. On the coasts is found the common glasswort; juniper, brambles, and several other berry-bearing shrubs border the highways and skirt the woods; a plant which the Danes call manna (festuca fluitans), and the grain of which yields very tolerable food, grows spontaneously in several of the islands, especially in Laaland. There are also several other indigenous plants, which are found useful in medicine and dyeing.

ANIMALS. — In losing their vast forests the Danish territories have lost also the larger wild animals. The wolf has entirely disappeared; the wild boar has become very rare; the stag and the fallow deer exist only in parks; but the fox, the martin, the polecat, the rat, and various smaller quadrupeds, exist in great numbers. Game is everywhere abundant; on the coasts of Jütland wild geese and ducks, partridges, snipes, and thrushes, frequent the marshes and fields; swans live at large in the Liimfiord, and on the islands of Amack and Bornholm, which they quit only when compelled by the severity of the frost; the eider-duck nestles in the clefts of the rocks; but the eagle and other large birds of prey are seldom seen. Domestic animals form the principal wealth of Denmark. Geese and other fowl afford considerable profit to those who breed them. There are two kinds of horses; the one, small but vigorous, abounds in the islands; the other, large, strong, and well shaped, is confined to Holstein and Jütland, and sought after by foreigners. Horned cattle are also smaller on the islands than on the mainland; their great numbers, and the number of the sheep, the breed of which has undergone the most important improvement by crossing with

* On the Vegetation and Temperature of the Faroe Islands by W. C. Trevelyan. — *Edinburgh New Philosophical Journal*, vol. xviii.

the breeds of Spain and England, attest the progress of agriculture. The swine of Jütland, are sent in considerable herds into Holstein, and there fattened and salted for exportation. Denmark has also long supplied the Continent with that race of dogs called Danish, famed for their strength and their fidelity, and also with the small black muzzled dog which the French call Carlin. The seas abound with fish; which not only supply a great portion of the people with food, but afford a surplus for exportation. Plaice is taken in the neighbourhood of the Skaw; the western coasts of Schleswig and Jütland are well supplied with beds of oysters; the borders of the Cattegat supply abundance of lobsters; porpoises and sea-dogs are often caught in the nets; and the small river Slie, in Schleswig, furnishes a species of herring which is in some estimation; and the Guden in Jütland supplies excellent salmon.

PEOPLE AND LANGUAGE. — The people of Denmark, with the exception of a few thousands *Jews* in Copenhagen and Altona, are of German descent, but of four distinct races:—1. The *Danes*, who form the great mass of the population, and occupy the islands, with North Jütland, and three-fourths of Schleswig. 2. The *Germans*, who possess Holstein, Lauenberg, and part of Schleswig. 3. The *Frisons*, who inhabit the islands along the west coast of Jütland, and a part of the bailiwick of Husum in Schleswig. 4. The *Angles*, who live between the Bight of Flensburg and the Schley on the Baltic. The Danes are of a middling stature and fair complexion, and are habituated, more than the people of the south of Europe, to the use of animal food and spirituous liquors. They have, in short, the habits of a people living in a northern latitude, and, except in the capital, are little acquainted with the improvements of the more polished part of Europe; the peasantry, besides, are but recently emancipated from a state of feudal servitude. On the other hand, the Danes have long enjoyed the various advantages resulting from the establishment of the Protestant religion.

The Danish language, though a cognate branch of the Teutonic, belongs to an independant and distinct family, the Scandinavian Gothic; and is, with respect to structure and roots, more remote from the modern High Dutch than the Portuguese is from French; yet the affinity and even identity of roots of the Teutonic and the Scandinavian tongues is so great that no doubt can be entertained of their common origin. Their separation, however, must have happened long before the commencement of authentic history, and their identity is therefore only a matter of philological inference. The modern Danish is sprung from the Norse, and bears exactly the same relation to that language as Italian bears to Latin. It is one of the softest languages now spoken in Europe, the consonants being so softened in pronunciation that they are scarcely perceptible.

POPULATION. — In 1828 the population of Denmark, including Iceland and the Färoe Islands, amounted to 1,988,531, of which 1,209,531 were Danes, 648,000 Deutsch, 70,000 Frisons and Angles, 55,000 Norse or Norwegians, and 6000 Jews. The latest account we have of the population is that of the year 1840, with the exception of Iceland and the Färoe Islands, the latest accounts of which are of 1834 and 1835:—

Zealand, Copenhagen,		451,180
Moen, 12,297, Bornholm, 25,199,		37,496
Fünen, 158,282, Langeland, 15,969,		174,251
Laaland, 50,447, Falster, 20,955,		71,402
North Jutland,		548,698
Total of Denmark proper,		1,283,027
Schleswig, 348,526		
Holstein, 455,093		848,961
Lauenburg, 45,342		
Iceland (in 1835), 56,034, and Färoe Islands (in 1834), 6,928 =		62,962
Total,		2,194,950

Colonial Possessions in 1835, 126,462.

RELIGION.—Lutheranism is the established religion of the State, and is professed by almost the whole of the people. There are also a few Catholics, Hernhutters, Calvinists, and Mennonites; and the Jews, though few relatively to the general population of the kingdom, are nevertheless more numerous than the members of any of the four sects last mentioned taken separately. Not only does the most complete toleration prevail, but professors of all religions are admitted without distinction to public employments and dignities. There are nine Lutheran bishops, all nominated by the King; but they have no political character, and are confined exclusively to the proper duties of their office. The number of established clergy in

* According to the census of 1840, the population was 2,194,950.

Jütland and the islands is about 1063; in Schleswig and Holstein, 517. They are paid partly by a share of the tithes, and partly by fees and glebe lands.

EDUCATION.—The educational institutions have reached a high degree of perfection; indeed few countries, if any, can compete with Denmark in this respect. All the institutions for education (except the University of Kiel) are managed by a Royal College, or Commission, which appoints the professors in the University of Copenhagen, and the rectors and teachers of all the grammar schools in Denmark proper. The University of Copenhagen has four faculties:—a theological, a judicial, a medical, and a philosophical; and to the last mentioned belong Greek and Roman literature, ethical and natural philosophy and metaphysics, mathematics, statistics, history, political economy, &c. The number of grammar and parish schools amounts to 3000; and there are, besides, 2000 schools in which the Bell and Lancastrian systems have been adopted. The latter are intended for elementary education and the instruction of the common people. The trade in education is, nevertheless, entirely free; any person, native or foreign, may establish a school in Copenhagen and compete with the Government schools; and their pupils are received at the University upon the same terms. But, though the number of schools is so great, and education apparently within the reach of all, yet the Danes generally are, nevertheless, said to be in a condition of great ignorance; and the system upon which their education is conducted, is said not only to fail to call genius from obscurity and foster it when discovered, but, on the contrary, to be destroying, and calculated to destroy everything like originality.* There is also a University for Holstein established at Kiel; but less richly endowed and less flourishing than that of Copenhagen.

GOVERNMENT.—From 1660 till 1834 the government was an absolute monarchy in Denmark proper, without any legal or constitutional check; but it was tempered in various ways, by the influence of the Reformed faith, the freedom of the press, and the progressive improvement of the nation. In 1834, the late King Frederick VI. voluntarily relinquished a large share of the royal power, by granting to his people a free constitution. The kingdom has been divided into four districts, each of which has an Assembly or Parliament, without whose consent no law affecting person or property can now be promulgated; new taxes, as well as all levies for the public service, must be sanctioned by them. They can likewise suggest laws to the King for his approval; and, without having the power to judge public servants, they enjoy the right of formally complaining against them. The four provincial States are:—1. That of the Islands, which have 70 representatives; 2. Jütland, 51; 3. Schleswig, 44; and 4. Holstein, 48. Lauenburg is still governed by its old constitution. The public business is managed by a Privy Council nominated by the King; and subordinate to this council are the Chanceries of Denmark, Schleswig and Holstein, the Office of Foreign Affairs, the Treasury, the Chamber of Commerce, the Admiralty, the War-Office, and the Board of Trade. None but natural-born subjects are admitted into public offices, except in cases of extraordinary qualification. With respect to laws, there is no uniform code for the whole kingdom; Schleswig and Holstein retain their ancient usages and institutions, whilst Denmark proper, consisting of North Jütland and the Islands, is governed by the code of Christian V., who reigned from 1670 to 1679. There are in Denmark two orders of titled nobility, Counts or Earls and Barons; but there are also, as in every feudal kingdom, an untitled nobility, who rank as high in public estimation as those whom the King has enobled. In Holstein and Lauenburg, which form a portion of the Germanic Confederation, the nobility enjoy great privileges. The Ditmarshians in Holstein, and the citizens of Altona, likewise enjoy great liberties and privileges; and, in particular, are exempt from the system of excise and customs, to which all the rest of the kingdom is subjected.

REVENUES.—The public revenues are derived from various sources, viz. land-tax; house-tax; customs and excise; tax upon rank and salaries; stamps; tax upon property inherited or transferred; fees levied in public offices; woods and forests and other crown property; lotteries; the Sound toll, and various minor articles. The total amount for each of the two years 1835 and 1836, was £1,653,792, and £1,543,181 sterling. Of these sums about one fourth was produced by the Customs and Excise, and one fifth by the land-tax; but no less than £240,909 were derived from the sale of crown property in the two years, forming a large extraordinary item of revenue. The expenditure for each of these years, which may be taken as a fair average of the amount, stood thus:—

* *Bremner's Excursions*, I. 119.

	1835.	1836.
1. Establishment of the King and Royal Family,	£138,547	£133,283
2. Public departments, exclusive of the Customs,	147,273	160,712
3. Army,	300,557	308,002
4. Navy, and registration of seamen,	127,902	127,074
5. Pensions and allowances,	69,619	95,205
6. Public works,	58,439	60,321
7. Paid for encouragement of manufactures and institutions of public utility; on account of trade, and salaries and expenses of consuls abroad,	6,593	46,043
8. For the support and encouragement of the arts and sciences (including university of Kiel and theatre of Copenhagen),	28,691	25,798
9. Charitable institutions,	14,555	12,305
10. Miscellaneous expenditure,	51,292	33,410
Interest of the public debt,	532,816	525,744
Payments to the sinking fund of ditto,	106,553	78,841
	£1,583,037	£1,584,108

The amount of the public debt, as at 1st January 1838, was £13,969,035 sterling. The duties collected on ships passing the Sound, in the years 1835-6-7, was £177,324, £211,094, and £213,997; while the expense of the lighthouses for the maintenance of which the Sound toll was once ostensibly levied, was, in 1835 and 1836, £4849 and £6533! This tax is felt to be a very grievous burden upon shipping, not only from its amount, but from the way in which it is levied; but till those who pay it make an effectual remonstrance, it is not to be expected that the King of Denmark will renounce or diminish so large and easily collected a part of his revenues.

ARMY AND NAVY. — The army permanently on foot consists of about 12,000 men, and 3700 horses; but, at the period of the annual drill and exercise, when all the men absent on furlough attend, it amounts to 24,867 men, and 18,067 horses; besides the men employed in the baggage train, hospitals, head-quarters, in Bornholm, Färoe Islands, and the transatlantic colonies. Including all these, the total number will amount to 72,000 men. The country is divided into three military divisions; the first of which comprises Zealand, Laaland, Falster, Moen, Bornholm, and Christiansoe; the second, Jütland, Fünen, Samsoe, Langeland, Thorseng, and Arroc; the third, Schleswig, Holstein, and Lauenburg. At the close of 1845 the navy consisted of 7 ships of the line, 7 frigates, 5 sloops, 6 brigs, 3 schooners, 3 cutters, 58 gunboats, 6 gun-rafts, and 3 bomb vessels; requiring about 6500 men to man them upon the war establishment; and as there are upwards of 15,000 registered seamen liable to serve, there can be no difficulty in manning this fleet at any time. The merchant navy is in a very flourishing condition. The Danish sailors are steady, persevering, and faithful in the highest degree; and they work their vessels on such moderate terms, that they are much employed in the carrying trade by other nations.

PRODUCTIVE INDUSTRY. — 1. *Agriculture.* — Agriculture is in rather a backward state, and the condition of the agriculturists is not more advanced than that of the English farmer was a century ago. Whilst in England the labour of thirty-five persons in a hundred suffices for the agriculture of the country, in Denmark the labour of nearly sixty persons is expended for the same purpose. This is owing to the inferior quality of the implements, the smaller size of the farms, and the general backwardness of agriculture. In three-fourths of Jütland, oats, barley, and rye are the principal grain; wheat is little cultivated; but of late the cultivation of potatoes has been much extended. In the level and marshy tracts along the west coast, heavy crops of oats are raised, and rape is cultivated with advantage; but the great object of the farmer is grazing; and both horses and beeves are exported to a considerable amount. The products of Holstein are rye, barley, oats, and more wheat than in any other part of the kingdom; but its chief wealth consists in its pastures, and the horses and beeves which are fed upon them. The dairies of Holstein are also in high repute; and large quantities of cheese are made for exportation. Sheep-farming was formerly almost unknown throughout the province, but of late great care has been bestowed on this branch of industry. In Lauenberg and the islands, the agricultural produce is chiefly confined to the inferior kinds of grain. But throughout all Denmark, as well as the north of Germany, the long and severe winters are a continual and irremediable hindrance to agricultural improvement. The fiords, bays, and rivers are well stocked with fish, the taking of which form the principal occupation and subsistance of many of the inhabitants.

2. *Manufactures.* — The Danes have made very little progress in manufactures; two-thirds of the people derive their support from agriculture, and the others confine themselves to the supply of their own consumption in certain articles. Earthenware is made in many places; in Holstein there are considerable works in copper and brass; the cannon foundry at Frederickwark is very extensive, but of iron foundries there are only four in the kingdom. According to a late return, there were nearly thirty paper-mills, and forty-six sugar-refineries. The other branches of manufacturing industry worth notice are: — the tanning of leather, hat-making, and, among the pea-

santry, the practice of spinning linen and woollen, and knitting stockings, all performed by their families in their cottages. Such manufacturing establishments as they have are on a very small scale; and the existence of guilds, corporate rights, and exclusive privileges, still operate as a complete bar to their improvement.*

3. *Commerce.*—Few countries are more favourably situate for trade; and the Danes have not been insensible of their natural advantages. Of late years trade has assumed new life, and is rather in a flourishing condition; though its advancement has been more apparent in the provincial towns, such as Altona, Aarhuus, and Aalborg, than in the capital. The principal articles of export are:—corn, butter, meal, cheese, horses and beeves, skins, tallow, salt meat, lard, salt fish, wool, and corn brandy, which is manufactured to a great extent at Copenhagen. The principal articles of import are:—wine, salt, timber, tar, pit-coal, fruits, raw sugar, coffee and other colonial produce, cotton, silk, glass, raw and manufactured metal, fine cloth, silk stuffs, cotton twist, ironmongery, and many other articles. The principal trading towns are:—Copenhagen, Altona, Elsinore, Flensborg, Aarhuus, Kiel, Rendsborg, Tönningen, Glückstadt.

INTERNAL COMMUNICATION.—The roads in Zealand and the other islands are generally very good; but in Jütland, Schleswig, Holstein, and Lauenburg, they are in the most neglected state. The numerous arms of the sea afford an easy communication between the different parts of the kingdom; but the navigation round the northern point of Jütland being always tedious, and sometimes dangerous, from sandbanks and currents, the *Canal of Kiel*, in Holstein, was formed, at a great expense, to obviate these disadvantages. It was commenced in 1777, and finished in seven years. It extends from the town of Kiel, on the Baltic side, westward about 23 miles to the river Eider, which has been made navigable to the North Sea. The canal is 100 feet wide at the top, and 54 at the bottom; has only six locks, and the smallest depth of water is ten feet; so that vessels of 120 tons burden can pass through, and of these nearly 3000 sometimes pass in a year. Including the canal and rivers, the length from sea to sea is 105 miles. The *Canal of Stecknitz* connects the Elbe with the Baltic, by means of the Delvenau, an affluent of the Elbe, and the Stecknitz, an affluent of the Trave. The *Canal of Nestved*, in Zealand, connects the lake Bavelse with the Baltic sea. The *Canal of Odense* connects that city with the sea. *A railroad* has been projected, which is to extend from Altona to Kiel, through Holstein.

ADMINISTRATIVE DIVISIONS.—Denmark is divided into four great provinces:—1. The Kingdom of Denmark Proper; 2. The Duchy of Schleswig; 3. The Duchy of Holstein; and 4. The Duchy of Lauenburg; and each of these is subdivided into bailiewicks, and smaller districts.

The *Kingdom of Denmark* consists of North Jütland, and the islands of Sjælland (Zealand), Fyen or Fünen, Laaland, Langeland, Falster, Moen, Amack, Saltholm, Samsoe, Thorseng, Leso, Anholt, Bornholm, and Færoe; is divided into the *Bailiewicks of* Copenhagen, Fredericksborg, Holbek, Soro, Præsto, Bornholm, Maribo, Odense, Svendborg, Iljoring, Aalborg, Thisted, Viborg, Randers, Aarhuus, Skanderborg, Veile, Ringkjobing, Ribe, and Færoe; and contains the towns of Copenhagen, Roskild, Fredericksbürg, Kioge, Leire, Charlottenlund; Fredericksborg, Helsingor, Frederiksværk, Hillerod, Jægerpriis, Hammermollen, Holbek, Kallundborg, Nykjobing, Soro, Ringsted, Slagelse, Korsoer, Præsto, Nestved, and Herlufsholm—all in Zealand; Stege, in Moen; Ronne, Nexo, and Christianso, in Bornholm; Nykjobing, in Falster; Maribo and Naseov, in Laaland; Odense, Assens, Svendborg, and Nyborg, in Fyen; Rudkjobing, in Langeland; Iljoring, Skagen, Frederickshavn, Aalborg, Nibe, Thisted, Nykjobing, Viborg, Skive, Randers, Grenaa, Aarhuus, Skanderborg, Horsens, Veile, Frederits, Kolding, Ringkjobing, Holstebro, Ribe, Varde—all in Jütland; and Thorshavn, in Stromoe, in the Færoe Islands.

The *Duchy of Schleswig* consists of South Jütland, and the islands of Æro, Als, and Femern, in the Baltic, and is divided into the *Bailiewicks of* Gottorp, Flensborg, Tondern, Apenrade, and Lygumkloster, Hadersley, Hytten and Stapelholm, Husum, Bredsted and Eidersted, Æro, Nordborg, Sonderborg, Femern, and the *separate districts of* Ekernforde and Frederieksort, Cappeln, and Dyppelfœrge, &c., and contains the towns of Schleswig or Slesrig, Gottorp, Flensborg, Glyksborg, Tondern, Hoier, Apenrade, Lygumkloster, Hadersley, Christiansfeld, Frederickstadt, Husum, Bredsted, Tönningen, Garding, all in South Jütland; Æroskjobing and Marstal, in Æro; Nordborg, Sonderborg, and Augustenborg in Als; Burg, in Femern.

The Duchy of Holstein is divided into the bailiewicks of Rendsburg, Altona, Reinbek, Trittau—and Tremsbuttel, Rethvisch, Reinfeld and Travendal, Segeberg, Neumunster, Ploen and Arensboek, Bordesholm, Kiel and Kronhagen, Cismar, the county of Ranzae, the lordship of Pinneberg, and the *separate districts* of Preetz, Lutjenburg, Neustadt, Oldenburg, Heiligenhausen, &c.; and contains the towns of Glückstadt, Kiel, Altona, Itzehoe, Heide, Lunden, Meldorf, Brunsbuttel, Rendsburg, Kellinghausen, Ranzau, Elmshorn, Pinneberg, Ytersen, Blankenese, Reinbeek, Vansbek, Travendal, Oldeslohe, Segeberg, Bramsted, Neumunster, Ploen, Cismar, and Gromitz.

The *Duchy of Lauenburg*, is divided into the *Bailiewicks* of Ratzeburg, Lauenburg, Steinhorst, Schwarzenberg, and the separate district of Möln; and contains the towns of Ratzeburg, Lauenburg, Steinhorst, Schwarzenberg, and Möln.

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* "The Danes are in a complete state of pupillage. In the practice of the useful arts, in activity, industry, and well-being, they are two centuries behind those nations to whom in numbers and natural advantages of soil, climate, and situation they may be fairly compared, the Scots, the Dutch, or the Belgians. The extreme state of pupillage in which they are kept, not only extinguishes all industry and activity, but, from the host of functionaries who must be employed, where a government attempts to do every thing, and regulates and provides in matters which a people can best manage for themselves, it consumes all their capital, and leaves them nothing to be active and industrious withal. The total number of unproductive persons, such as civil functionaries, naval and military officers, seamen and soldiers, ministers of religion, and condemned criminals, with their families, is 121,444 persons out of a population of 1,240,000, or one to ten. There is one clergyman to every 276; one public civil functionary to every 176. If to these perpetual drains upon the earnings of the industrious in the middle and lower classes, be added the enormous waste of the capital and time of the country in palaces, gardens, shows, and military duties, and such other objects as reproduce nothing, it is not extraordinary that the people are sunk in sloth and poverty, although occupying the richest soil, and most advantageous situation in the north of Europe."—*Laing's Tour in Sweden*, 1838.

§ *Cities and Towns.*

COPENHAGEN (KJOBENHAVN, *i. e.* MERCHANT'S HAVEN), the capital of the kingdom, is situate on the east coast of Zealand, where the small isle of Amack forms a superb harbour. Though in a low situation, it is nevertheless one of the finest cities in Europe, being laid out in regular though narrow streets, and adorned with many fine buildings; such as several royal palaces, churches, hospitals, the town-house, exchange, mansions of the nobility, &c. It contains a University, one of the most flourishing and most richly endowed in Europe, and numerous other literary and scientific institutions and societies. The Royal Library, one of the richest in Europe, is said to contain 400,000 volumes; and the University Library 112,000. Several rooms of the palace are also occupied by an interesting collection of northern antiquities, formed within the last 30 years. It has a royal bank, and manufactures of linen, sail-cloth, woollens, leather; and also extensive dockyards. The shipping belonging to it amounts to about 500 vessels, manned by six or seven thousand seamen; but the trade of the city is confined to the supplying of its own inhabitants with articles of consumpt. Copenhagen is strongly fortified, and is defended by a citadel considered to be impregnable, and several forts, one of which, the Trekroner, is built in the sea, upon a sandbank, about a mile from the city. The population exceeds 120,000. The immediate environs of the city are of great beauty. At the distance of 8 miles N. by W. is *Lingby*, with 1000 inhabitants, greatly resorted to by the wealthy in summer; and to the south of the city is the island of *Amak*, which is so flat that the city may be seen over it. Amak is 9 miles long, and 3 broad, and may be called both the dairy and the garden of Copenhagen; for it supplies enormous quantities of vegetables, milk, butter, and cheese.

Roskild, the ancient capital, 20 miles W. by S. of Copenhagen, is a small town with only 1200 inhabitants, but contains a gothic cathedral, a rich library, and the tombs of the royal family. *Helsingor (Elsinore)* on the west side of the Sound, with 7000 inhabitants, has an artificial harbour, and near it is the strong castle of *Kroneborg*, intended to command the passage. The number of vessels which annually pass, is said sometimes to exceed 13,000. *Fredericksborg*, 16 miles from Elsinore, and 23 from Copenhagen, contains a venerable palace, which is admired as one of the most perfect specimens of Gothic architecture now in Europe. The town occupies several small islands, and seems to rise at once from the deep bosom of a lake.

Altona, in Holstein, on the north bank of the Elbe close to Hamburg, from which it is only separated by a hill called the Hamburgerberg, is a large town, possessing great privileges, a mint, and considerable trade; and contained, in 1835, a population of 26,393. *Kiel*, also in Holstein, contained, in 1835, 11,622 inhabitants; it is the seat of a university, and other literary establishments; has a royal castle, elegant sea-baths, and fine walks, and is situate on a gentle eminence rising from a fine bay. It is a flourishing place, with considerable trade, particularly in grain. The university library, consisting of 100,000 volumes, is contained in the ancient ducal castle. *Glückstadt*, the capital of Holstein, on the right bank of the Elbe, has a population of only 5988 inhabitants; but is a free port, and has a marine school. *Ratzeburg*, the capital of Lauenburg, is a small town with 2000 inhabitants. Lauenburg has 3000 inhabitants, and has a right of levying toll on vessels passing up and down the Elbe.

Schleswig, the capital of South Jütland, is a bishop's see, and a busy trading town, with 10,000 inhabitants, situate at the extremity of a long narrow inlet, named the Sli. Near it is the magnificent castle of *Gottorp*, the residence of the governor of Holstein and Schleswig. *Flensborg*, a fine town, on a gulf of the Baltic, has a school of navigation, a college, a well frequented harbour, and 13,552 inhabitants. *Tönning* or *Tönningen*, is a small seaport town with 2433 inhabitants at the mouth of the Eider.

Odense, in Fünen, is a bishop's see; has a fine cathedral, a lyceum, two libraries, and about 7000 inhabitants. *Aarhuus*, in North Jütland, is a thriving commercial and episcopal city, with a cathedral, a new harbour, and about 8000 inhabitants. *Aalborg*, also in North Jütland, is a commercial and episcopal town, noted for its herring fishery. It has also a college, a school of navigation, and about 8000 inhabitants. *Viborg*, is a very ancient episcopal city in North Jütland, with 3000 inhabitants. *Ribe* is an episcopal city, noted for its cathedral, and for the flourishing trade which it has carried on for some years with Holland. At *Frederickshavn*, near *Fladstrand*, a small town on the east coast of Jütland, to the south of Cape Skaw, the Danish Government are forming an artificial harbour, which will contain 100 vessels at anchor in 15 feet of water: protected by fortifications against any hostile attack.

§ *Foreign Possessions.*

The large island of *Iceland*, in the Arctic Ocean; the west coast of *Greenland*; the islands of *Santa Cruz*, *St. Thomas*, and *St. John*, in the West Indies; *Christianborg*, *Tema*, *Nimbo*, *Friedensborg*, *Adda*, *Kœninstein*, *Binzenstein*, on the coast of Guinea; *Serampore* and *Tranquebar*, in India.

ICELAND is situate between 63° and 67° North lat., and 12° and 25° West long., being about 280 miles in its greatest length, 200 in its greatest breadth, and its area being vaguely estimated at 40,000 square miles. The island is crossed from east to west by ridges of rugged mountains, from which numerous offsets branch out in all directions, and terminate on the coast in high and steep promontories. The interior of the country is a dreary desert, consisting partly of snow-clad mountains, called Yökuls, many of which are also volcanoes, and partly of vast tracts covered with lava, scoriæ, and volcanic sand. In the south-eastern quarter, is an elevated region, estimated to occupy no less than 3000 square miles, covered with ice and snow. The coasts, especially in the west, are deeply indented with *fiords*, in the vicinity of which are fine valleys, where the inhabitants have erected their dwellings, and where factories have been built for the purposes of trade and shipping. The whole island appears to be of volcanic formation, and there are still numerous volcanoes in full activity; there are also many boiling springs, which throw up water and steam to a great height, bogs of boiling mud, and dense columns of steam and smoke issuing from many places. The *Snaefell Yökul*, on the west coast, is the highest mountain, its elevation being 6862 feet; *Hekla*, the most celebrated, but not the most destructive volcano, near the south coast, is 5110 feet high. The climate is generally rigorous, but the winter is sometimes mild. Formerly there were many forests in Iceland, but they have all disappeared; the trees which now exist seldom rise above ten feet, and wood has become very scarce. Corn was also once cultivated to a considerable extent; but the inhabitants now find it more advantageous to attend exclusively to the rearing of cattle. Those on the coast are employed in fishing, which is very productive. Hay is the principal crop, and many of the hills are covered with coarse grass, which affords summer pasture to the cattle. The best inhabited districts are on or near the banks of the fiords; but most of the people live in detached cottages or farms, a certain number of which constitutes a parish, having a church and a Lutheran minister. The common food is butter, milk, and fish; fresh meat and rye bread are holiday fare. The Iceland moss is also a common article of food; but coffee, wine, and other luxuries are imported for the use of the wealthier classes. The exports consist of dried fish, whale oil, salted mutton, eider down, and sulphur. Turf is the common fuel. Copper and iron are found, but not worked. Reindeer, originally imported from Norway, have greatly multiplied, and live in a wild state. The Icelanders are the genuine descendants of the Old Scandinavians or Norsemen; and their language is considered as the standard of the Scandinavian tongues. Elementary

education, and even a certain degree of better information is generally diffused among them. Children are taught by their parents, with the assistance of the parish priest. There is but one high school in the island, at Bessasted, near *Reikiavik*, the capital, which is a small town of 600 inhabitants, on the south-west coast. The island is under the charge of a Stiftamtman, or governor, appointed by the King of Denmark for five years, with a salary of £300, and who resides at Reikiavik. The clergy are under the charge of an archdeacon, who resides at *Garde*, near Reikiavik. *Skalholt*, formerly the capital, and *Holum*, the see of a bishop, on the north coast, are both fallen into insignificance. The population in 1835 amounted to 56,034.

Helgoland, or *Heligoland* (Holy island), a group of two small islands in the German Ocean, 25 miles from the mouth of the Elbe, belonged formerly to Denmark, but was taken in 1807 by the British, who still retain it. The main island consists of a cliff, which rises almost perpendicularly from the sea, to a height varying from 90 to 170 feet, and is surmounted by a lighthouse, situate in 54° 11′ 84″ north lat., and 7° 53′ 13″ east long.; and joined by a bottom of rock to a low uninhabited down, where there are two good harbours. Between the main island and the other which is named Sandy island, is a road, where ships may anchor in 48 fathoms. The inhabitants, about 2400 in number, live entirely upon the cliff, and subsist chiefly by fishing and acting as pilots. They are Frieslanders; retain their ancient manners and customs; and obtain turf, wood, and other articles of subsistence from Hamburg and Cuxhaven, in exchange for fish. The island was formerly very much larger, but has been, in the course of the last thousand years, reduced by the sea to the existing fragments.

SWEDEN AND NORWAY, OR THE SCANDINAVIAN PENINSULA.*

SWEDEN and NORWAY form together one geographical region, under the general name of the Scandinavian Peninsula, and are governed by the same king; but, in every other respect, they are perfectly distinct and independent kingdoms, and are inhabited by different nations. We shall therefore describe the natural features and productions of both kingdoms together as one country, and divide the moral, political and statistical part of our description into two portions, under the heads of *Sweden* and *Norway*.

ASTRONOMICAL POSITION. — Between 55° and 71° N. lat., and 4° and 32° E. long.

DIMENSIONS. — From the Naze of Norway to Cape Nordkun in 28° E. long. the length is about 1100 miles; but from Falsterbo in the province of Malmo to the same point, it is 1190 miles. The greatest breadth, which lies under the 60° N. lat., is about 470 miles. The superficial area is reckoned to be 6652 square Swedish miles, equivalent to 292,700 square English miles; of which 170,240 belong to Sweden, and 122,460 to Norway.

BOUNDARIES. — *Northern:* — the Northern Polar Ocean. *Southern:* — the Baltic Sea, Cattegat, and Scaggerack; *Eastern:* — Russian Lapland, Gulf of Bothnia, and the Baltic. *Western:* — the North Sea and Northern Atlantic Ocean.

GENERAL ASPECT. — Scandinavia forms a large peninsula, connected with the rest of the European continent by a broad isthmus of more than 200 miles, which separates the Gulf of Bothnia from the Arctic Ocean. Throughout the length of the peninsula, from the Varangerfiord in the north-east, to the Scaggerack in the south-west, a line of lofty and rugged mountains, hills and table-lands, extends for 1100 miles, forming the water-shed between the Atlantic ocean, and the basin of the Baltic Sea. Their culminating point is on the borders of Dalerne, between 61° and 64 N. lat. To the north of 63° N. lat. the mountains form one ridge, rising precipitously on the western side, and gradually approaching nearer to the ocean as they proceed northward, till at last they rise from its very shores. To the south of 63° the elevated mass forms a table-land, in some parts perfectly level, and in others rising into hills, and having its eastern and western declivities furrowed by deep valleys. From nearly the same point several ridges branch off to the east and south, where they enclose the great lakes Wener, Wetter, Mälar, Miösen, and others; and some of them ultimately unite in forming the table-land of Smaland, which has an average elevation of 500 feet above the level of the sea.

This mountain mass rises abruptly from the shores of the ocean, and attains the greatest elevation of its crest, which has a medium height varying from 800 to 2000 feet, at a distance nowhere more than 100 miles inland, but in most places, and particularly towards the north, within fifty, or even twenty miles of the coast; while on the opposite or eastern side, the country descends in long slopes, interrupted by small level plains, and intersected occasionally by ranges of hills, towards the shores of the Gulf of Bothnia and the Baltic, along the former of which the coasts of Sweden, for fifteen leagues inland, rise to no greater an elevation than 300 feet above its level. Farther inland the country rises from 300 to 800 feet, where it reaches the mountains. More than a third part of the peninsula has an elevation exceeding 2000 feet above the level of the sea, and 3696 square English miles of its surface are above the limits of perpetual snow. Of these elevated and snowy regions nearly 3000 square miles of the latter, and almost the whole of the former, are in Norway. In Sweden, one third of the country has a less absolute elevation than 300 feet, while little more than a twentieth part of its surface exceeds 2000; and Schonen, the most southerly portion of the kingdom, is actually low and flat, apparently a portion of the great plain which includes the neighbouring regions of Denmark, Pomerania, and Mecklenburg. Of Norway, on the contrary, more than three fourths have an elevation exceeding 2000 feet above the level of the sea, and are unfit for cultivation, except in a few

* *Statistik von Schweden nach offentlichen Documenten*, von Carl af Forsell, ubersetzt Obon A. G. F. Freeze; Lubeck, 1835.

A Tour in Sweden in 1838; comprising Observations on the Moral, Political, and Economical State of the Swedish Nation; by Samuel Laing, Esq. London, 1839.

"On the Statistics of Sweden;" by Mr. George Stephens. *Quarterly Journal of Agriculture, Edinburgh*, VI. 92.

Excursions in Denmark, Norway, and Sweden, &c.; by Robert Bremner, Esq. London, 1839.

sheltered places. More than an eighth part is above 800 feet higher than the sea-level; about a tenth part rises to 800 feet; and only about one thirtieth is below 300 feet. The lowest tract, that which does not rise to 300, is situate along the shores of the Christiania Fiord. The coasts of the peninsula are lined with an intricate labyrinth of islands and rocks, called by the Swedes *Skargard*, and by the Norwegians, *Skjargard*, that is Reef-defence: which vary in size from a mere point of rock to more than a mile in length, and rise with bare and craggy cliffs from the bottom of the sea. The coast of Sweden is irregular in its outline, and is much indented with bays and small gulfs; but in Norway immense fiords or firths penetrate the country in all directions, extending sometimes to two hundred miles in length, and varying in breadth from a hundred yards to several miles. These indentions form the most remarkable physical feature of the kingdom, and afford the means of easy access, and a plentiful supply of fish, to its most inland recesses.

The southern part of Schonen presents a great resemblance to Zealand, with which it was once probably united. But beyond 56° N. lat., and behind an elevated land still covered with large-leaved timber, which traverses Schonen from S.E. to N.W. the country acquires an entirely new appearance, and assumes the character which it retains through almost the whole of Sweden. Solid rocks, clothed partly with lichens, and partly covered with a slight layer of earth, which permits only the growth of pines with horizontal roots, or of the birch, are formed into plains, hills, or high mountains. The valleys among the hills are watered by numberless rivers, which form in many places long and narrow mountain lakes, corresponding in their form and extension with the direction of the inclined strata of the rocks. The solid rock, which so often bursts through the thin layer of soil, gives a peculiar character to the hilly plains, where a naked cliff is often seen rising amidst corn-fields and meadows, and a foaming river, enclosed in a deep rocky bed, is heard making its way over fragments of rock. The greater part of Sweden is indeed intersected by mountain chains in the most varied directions, which enclose in some places cauldron-shaped valleys, in others only narrow ravines. The bottoms of the valleys generally contain lakes, while the ravines are traversed by foaming streams, lined on both sides by rugged walls of rock. The more gentle acclivities, which enclose the broader valleys, are covered with thick pine forests. Sometimes the gloomy pine gives way to the more agreeable birch, or retires and encloses a group of fields and meadows. If Sweden be hilly, Norway may fairly be called mountainous. That country is indeed occupied by the great mountain chain of the peninsula, whose branches enclose valleys of various forms, the bottoms of which are generally occupied by firths or lakes, bordered, in the lower parts, with meadows and corn-fields, which extend upwards as far as the first acclivities of the mountains. Where the ground becomes steeper, these are succeeded by the pine forests, which raise their tall heads among inaccessible cliffs; and above all are seen the tops of the mountains covered with snow, or enveloped in clouds. The rivers, rushing down the steep declivities, form numerous, and often stupendous, cataracts, where they bound over precipices, which extend across the full breadth of the stream; and upon the rocks which border them saw-mills are boldly placed, in order to have the advantage of the headlong force of the current. During the more severe season of the year these northern regions are clothed in a very different, though not less beautiful vesture. Fields of ice take the place of the lakes, whose margins are then strongly contrasted with the dark green colour of the never-fading pines. The snowy tops of the mountains glancing in the sun, and the blue tint of their icicles, produce views of indescribable beauty, which are greatly enhanced by the almost constant serenity of the dark blue sky. But the splendour of the north, arrayed in its winter garb, appears to most advantage in the star-lit nights, when the aurora borealis is reflected by the bright fields of snow.

In both Sweden and Norway, however, there are very extensive tracts, and even whole provinces, which are marked by the greatest degree of wildness and barrenness, in the midst of which the traveller is apt to forget the agreeable impressions produced by the scenes already described. This is the character generally of Lapland; but such regions occur also among the mountains farther south, and particularly on the alpine plains, which, under the name of Kolen, form the boundaries of Dalecarlia and Norway, where a person may travel for days without finding a single human habitation.

Gulfs, Bays, and Straits. — The smaller bays, gulfs, and firths are too numerous to be particularized; but of the larger, we may mention the *Christiania Fiord*, entering from the Scaggerak; the *Bukke Fiord, Hardanger Fiord, Trondheim Fiord, Vest Fiord*, all on the west coast of Norway; the *Porsanger Fiord, Tana Fiord*, and *Varanger Fiord*, on the north coast; and the *Strait of Kalmar*, between Oland and Gothland. The *Malström* or *Moskoestrom*, long celebrated as the most appaling whirlpool in Europe, is situate near the southern extremity of the Lofoden Islands, beginning between

Moskoenæs, and exhausting itself between Varoe and Rost. The whirlpool is occasioned by the rushing of the tide among these islands, which impede its course, and cause it to make a circular sweep or whirl, where the great inequalities of the bottom increase the violence of its current.

CAPES. — *Nordkun*, the most northerly point of the Continent of Europe; *North Cape*, on the island of Mageroe, the most northerly point of Europe, not continental; *Lindesnæs*, or the *Naze of Norway*, the most southerly point of that kingdom.

ISLANDS. — 1. *In the Baltic.*— *Gottland*, or *Gothland*, 80 miles long and 30 broad, forming a great table of limestone, full of the fossil remains of extinct mollusks, between 80 and 150 feet above the level of the sea. The island is highest on the west side, and slopes gradually to the east, but with no inequalities deserving the name of hill or valley. The climate is remarkably mild; the people do not reckon on having more than eight days of sledge driving in winter; and here, in lat. 57½° N. the grape, the white mulberry, and the walnut, ripen in favourable seasons and in good situations. The island abounds with forests and game, cattle, sheep, and goats; it is well watered, and contains much arable land, with rich pastures and meadows. The principal exports are wheat, rye, deals, and lime, some wool and salted meat.—Population in 1835, 40,671; of whom 4268 lived in *Wisby*, the capital, and 36,403 in the country. — (*Laing.*) *Oland*, or *Oeland*, 86 miles long, greatest breadth 10, separated from the mainland of Sweden by a narrow strait, partakes of the character of Gothland, being composed of schistose, silicious and calcareous rocks, with pleasant and well watered valleys, rich in pasturage and meadow ground, and supporting much cattle. *Faro*, a small island at the nothern extremity of Gothland. *Gottska Sando*, a small island, 25 miles N. of Faro. *Grason* and many others to the E. and N.E. of Stockholm. *Holmon*, near Umea. *Huen*, a small island in the Sound, 15 miles N. of Copenhagen, noted for the castle of *Uranienburg*, which was erected by, and some time the residence of Tycho Brahe. 2. *In the Ocean.*—The *Lofoden Islands*, a group which extends to the westward of the Vest Fiord, between 67° and 69° N. lat. They are of a rugged and dismal appearance, resembling piles of rocky mountains, covered with snow, and rising abruptly from the sea to a height varying from 100 feet to 4000. The most considerable are the *Andoen*, *Langoen*, *Hindoen*, *East Waagen*, *Wet Waagen*, *Flugstadoe*, *Moskenæsoe*, *Værøe*, *Rost*. Along the coast to the northward are the large islands of *Senjen*, *Hvaloen*, *Ringvadsoe*, *Vanen*, *Sorœ*, *Stiernoe*, *Seiland*, *Mageroe*, and many others, all classed under the general name of *Lofoden-Mageroe* by the French geographers. The *Vigten islands*, a small group, in 65° N. lat., are noted as the place from which Rolf or Rollo set sail for the conquest of Normandy. Further south are the large islands of *Smoelen*, *Aveiloen*, or *Trojen*, and *Hitteren*, to the west of Trondheim; *Hosteroen*, *Storoen*, *Bommeloe*, *Carmoe*, and many others, opposite the Handanger and Bukke Fiords. *Bären*, *Bear*, or *Cherry* island, in the Northern Ocean, nearly midway between North Cape and Spitzbergen, is also considered as belonging to Norway. It is a small island, 30 miles in circumference, entirely composed of secondary sandstone, and horizontal shelly limestone, with a bed of coal, from two to four feet in thickness, of good quality, in the sandstone. The island is uninhabited.

RIVERS. — The *Tornea*, which rises in the mountains of Norrland, flows through the Lake of Tornea, and falls into the northern extremity of the Gulf of Bothnia. Its principal affluent is the *Muonio*, and the two rivers together form the boundary between Swedish and Russian Lapmark.

Proceeding along the coast southward from Tornea, we meet successively with the rivers *Calix* or *Kalix*, *Ranea*, *Lulea*, *Pitea*, *Byske*, *Sildut* or *Skelleftea*, *Umea* and *Windel*, *Gilleu*, *Angerman*, *Indals*, *Ljusne*, and *Dal*; besides many smaller streams, which all flow into the Gulf of Bothnia. The *Mottala*, which flows out of Lake Wetter, through the smaller lakes of Boren, Roxen, and Glan, and falls into the Baltic below Norrkoping.

The *Gotha* is the outlet of Lake Wener, and falls into the Cattegat at Gotteburg. Lake Wener receives many large streams, the principal of which is the *Klar-elf*, which rises in Norway, to the east of the Dovre-fjeld, and flows through the Lake of Fämund.

The *Glommen* rises in the mountains to the south-east of Trondheim, and has its sources in two small lakes, the one of which is 3000, and the other 3627 feet above the level of the sea. The parent streams fall into the Lake of Oresund, below which the united stream passes through several other lakes, and, after a course of 400 miles, falls into the Scaggerack, below Frederickstadt. This is the largest river of Norway; even at the distance of 200 miles from its mouth it is described as a fine majestic stream; but the navigation is obstructed by numerous falls, and on the melting of the snows, or after great rains, it acquires immense volume and rapidity, and sometimes occasions frightful devastations. It is also named the *Stor-elf*, or *Great River*. Its principal affluent is the *Vermen-elf*, the outlet of Lake Miösen. One of the principal feeders of that lake, the *Louger*, sends also another branch to the Lake Lessoe, whose outlet flows north-westward to the North Sea, at Molde, thus forming a complete cut through the great mountain range. During great floods part of the waters of the Glommen finds its way to the Lake Wener by the *Wrungo-elf*. The *Drammen* runs from Lake Tyris Fiord to the Christiania Fiord. The *Tana*, in East Finmark, which forms the north-eastern boundary between Norway and Russia, has a course of 300 miles, and runs into the Tana Fiord.

LAKES. — The Scandinavian Peninsula contains a great number of lakes, most of which are long and narrow, corresponding with the valleys in which they are formed; and many of these are not only very deep, but also at the great elevation of more than 2000 feet above the level of the sea. Besides these, Sweden contains three lakes of the first class :—

The *Wener*,* the largest lake in Europe, after those of Ladoga and Onega, is 90 miles in length, by 36 in its greatest breadth, covering an area of 2136 square miles. Its surface is 144 feet above the level of the sea; and its depth is generally from 40 to 50 yards, though in one place it is 96, and at the southern extremity, only 24. Its borders are studded with islands, and the north-eastern shores are bold and richly clothed with wood. It receives about 30 tributary streams, and discharges its surplus waters by the Gotha. The *Wetter* measures 82 miles in length, and 16 at its greatest breadth, but is generally much narrower, and contains only 830 square miles. Its surface is 288 feet above the level of the sea, and its depth varies from about 160 to 440 feet. Owing however to the violent blasts which come from the adjacent mountains, the navigation is dangerous; and even in calm weather it is liable to sudden agitations. The *Mälar* or *Maelar*, extends east and west, from Stockholm to its western extremity, nearly 70 miles. It has a most irregular figure, is crowded with islands; and presents throughout the most varied changes of beautiful scenery. It communicates by a narrow strait at Stockholm, with an arm of the Baltic Sea, crowded, like the lake, with innumerable islands, and forming a very intricate navigation of 60 miles between the open sea and the capital. *Hielmar*, W. of Stockholm, 38 miles in length, with a breadth varying from 12 to 1 or 2; and its greatest depth 66 feet. The lakes Mälar and Hielmar are surrounded by fertile fields. The *Sillian*, in the government of Stora Kopparberg; the *Storjon* in Jemtland; the *Stor Unun*, and *Stor-Afvan*,

* The names of these lakes are sometimes found in English books and maps in the form of *Wenern*, *Wettern*, *Malaren*, *Hielmaren*; but these are merely the adjective forms of the names, to which *lake* is the substantive.

in Wester Bothnia; the *Lulea* and *Tornea-Tresk*, in North Bothnia. The *Miösen*, 80 miles in length, the *Famund*, the *Tyris*, the *Oresund*, 2400 feet above the level of the sea; and the *Rys* are the principal lakes in Norway.

MOUNTAINS. See *Scandinavian System*, anté, p. 156.

CLIMATE.—The Peninsula extends through sixteen degrees of latitude, from 54° northwards, far beyond the Arctic circle, and a large portion of it, therefore, adjoins the confines of perpetual winter. It possesses, nevertheless, a great diversity of climate, and the lowlands of Sweden are generally warmer than their northern position would indicate. The temperature is, of course, much modified by the elevation of the ground, so that, while at North Cape, by the sea-side, the average temperature of the year is 32°, 150 miles further south, but 1470 feet above the level of the sea, it is 4° or 5° lower. The summer is short but warm and dry. At the head of the Gulf of Bothnia the summer ends in September, while on the other hand it begins only in May or June; but, while it lasts, the heat of the sun, which remains so long above the horizon, is intense. The winters, however, are long and severe, extending from November to April or May, and sometimes even to the middle of June. Frost and snow generally commence in November; the lakes and the rivers, and even the Gulf of Bothnia are frozen over, and the whole country is covered with a deep layer of snow. Even at Stockholm, which, from its low insular situation, enjoys a comparatively mild climate, the thermometer often sinks, in winter, to 28° below zero; and a hundred miles further north, or beyond the 61st parallel, the mercury freezes in the tube of the thermometer, so that it is impossible to make observations with it. In Jemtland, and round Tornea, the climate is so rigorous that the lakes sometimes continue frozen all the year, and the people are obliged to cut their crops green, to prevent them from being buried beneath the new falling snow; yet Ariskutan in Jemtland, 63° N. lat. and 4919 feet above the level of the sea, is not considered to be within the line of perpetual snow, although some parts of it are never free. But to the south of Stockholm the climate is much milder, though still subject to extremes of temperature; and even in Schonen, the most southerly province of the kingdom, the average temperature of the year is only 45°. At Stockholm the mean temperature in January is 24°, in July 64°, and the greatest heat ever recorded was 96·8°. The atmosphere of Sweden is generally pure, and the ravages of contagious diseases are never experienced. The beauty of the warm and dry summer, which dissipates the frost and dissolves the snow at once, causes vegetation to burst forth with luxuriant vigour, and brings it to perfection with magical celerity, makes people almost forget that there is no continued spring, and that the winter will again overtake them, before they can have fully appreciated the delights of the blooming country. The shortness of the summer is, however, in some measure compensated by the longer continuance of the sun above the horizon, which, in the north, brings the corn to maturity in six or eight weeks. This bright summer calls forth all the splendour of the northern flora, which, though not remarkable for variety, is rich in those plants which are peculiar to the country and climate. In closeness and verdure the flowery carpet of the northern spring, far exceeds that of the south. On the other hand, the pure bracing cold of a northern winter invigorates the active powers of life, and is found, at least by the natives, to be far less oppressive than the moist piercing cold of more southern regions. But, within the last seventy or eighty years a gradually progressive change of seasons has been remarked in Sweden; winter continually encroaching on spring, and summer on autumn. The mean quantity of rain which has fallen annually during 36 years has been 17½ inches, which indicates a drier, and consequently a warmer climate than that of Britain.

The climate of Norway is less cold, but more moist and changeable than that of Sweden, and generally less salubrious. Among the mountains of the interior, the winter is long and severe; but towards the western coasts the cold is little felt, except when the east wind prevails; the bays and firths never freeze; but the saline exhalations from the sea, the fogs, the rains, and the tempests extend their pernicious influence far into the country. The weather, however, is generally steady, being either good or bad for considerable periods. The summer is delightful, and very warm. In the narrow glens the noon-day heat is oppressive; but the morning, evening, and midnight hours are agreeable, and of a nature peculiar to this country. Summer lingers long, and is, in general, an unbroken series of beautiful days; but, as in Sweden, there is no continued spring; as soon as the snow disappears, vegetation bursts forth at once, and advances with astonishing rapidity. From lat. 58° to 59° the average temperature of Norway is about 45°; and there is no

permanent snow. Between 59° and 60° the average is 44°; and between 60° and 61° it is 43° on the coast, and 41° in the interior. From 61° to 62° it is 40°; and in the same proportion, it continues to decrease as we proceed towards the North Cape, where, as already mentioned, the average temperature of the year is at the freezing point, though the winter is not more severe than at Trondheim, except when the north-east winds blow. At 60° N. lat. the line of perpetual snow is about 5800 feet above the level of the sea; at 61°, 5600 feet; at 62°, 5300 feet; at 64°, 4800 feet; at 67°, 3900; at 70°, 3600 feet; and at 71°, North Cape, 2400 feet.

The winter, however, though rigorous, is pleasant and salubrious; for although the air is cold, yet it is dry and bracing, except immediately upon the south-western coasts. This is the most favourable season for commercial activity and mutual intercourse; the hard snow affords an easy passage over the rugged country and the frozen lakes and gulfs; and it is then that out-door amusements are kept up in active succession. The most disagreeable part of the year is in April and May, when the melting of the snow renders the country almost impassable, and occasions dreadful ravages by inundations, and by the fall of rocks and earth from the mountains. Travelling then becomes impracticable, till the month of September, when the snow is nearly all melted, and the summer heat has lost its force.

GEOLOGY AND MINERAL PRODUCTIONS.—The mountain nucleus of Scandinavia is composed of primitive and transition rocks, the former of which greatly predominate. The oldest and the most widely distributed rock is gneiss, granite being rare, and seldom appearing on the surface; and in the gneiss are frequently enclosed beds of fine white granular marble or limestone, and also of hornblende. The beds of gneiss present throughout their whole extent very remarkable contortions and wavings, which are extremely striking, as they are seen exposed to view for a great distance, and quite bare, without being concealed by vegetation or forests. The next primitive rock is mica-slate, which, though very extensively distributed, is, upon the whole, less so than the gneiss, with which it is frequently interstratified. It forms also many of the islands on the coast of Norway, and of the mountains in the interior. Associated with it are numerous strata of limestone, which sometimes assumes the character of dolomite; strata of quartz often of great thickness and extent; clay-slate of a lighter colour than that of the transition formation; chlorite-slate, and hornblende-slate, are also found, but in less abundance than the gneiss and mica-slate, of which they seem to be, in many cases, only accidental varieties. These primitive stratified rocks are widely distributed over the whole country; and even where they are covered by newer formations, the dip and position of the strata seem to indicate that they are the foundation on which the latter repose. Granite, though rare, is found underlying and elevating these primitive strata, interseeting them in the form of veins, and spreading over them. But between the position of the granite of Sweden and that of other countries, there is this striking difference: that, while in the latter the granite is usually covered by the stratified formations, and only appears in the summits of lofty mountains, in Sweden, on the contrary, it appears in the form of low hills; in the level parts of the country lies close to the surface; and on the coasts forms numerous little bays, creeks, and rocks running out into the sea. Diallage, porphyry, greenstone, and other plutonic rocks are also found occasionally associated with the primitive formation. Tracts of country belonging to the transition formation occur in many places, and particularly on the west side of the Christiania Fiord, through the interior of Aggershuus, and in the Swedish provinces of Dalerne, Herjeadalen, Jemtland, Sehonen, and Gothland, where they cover a great extent of country; and on the shores of the Wener lake the series is fully developed. Near Tornea, transition grey-slate and black compact limestone appear, though little more then fragments among the primitive rocks. This formation likewise includes the islands of Gothland, Oland, and Bornholm; and abounds, especially the limestone, in organic remains. Secondary formations are far less widely distributed than the two more ancient classes; and it is chiefly in Sehonen and Gothland, that they are to be traced. Round Helsingborg there is a small coal basin, said to extend also under the sea; and coal is found also in Bornholm. The chalk deposits, including the greensand, occur in Sehonen where they traverse nearly the whole province from Cape Kulloberg to Degeberga and Magleham; and extend northward to Carlshamn and Morbog in Bleking. Above all these there are immense deposits of sand and shells in various parts of the country. Shells are found at various elevations far up the country, both in Sweden and Norway, but particularly in the latter, where they occur at 400, 500, and even 600 feet above the level of the sea. The sand occurs in ridges, extending

many miles in length, and from 50 to 100 feet high, named *Oasar* or *Sandoasar* by the Swedes. These banks are found in Upland, Westmannland, Nerike, and Smaland, with a general direction from N.N.E. to S.S.W., and are often so level on the top that public roads are carried along them. The existence of these masses of sand has given rise to various opinions among geologists respecting their origin; but our space prevents us from giving any account of their speculations.* It is now believed to be an ascertained fact, that certain parts of the coasts of Sweden are progressively rising above the level of the sea; but what renders this phenomenon still more curious is, that not only does the rise not take place along the whole coast at the same yearly rate, but that certain points, instead of a progressive elevation, experience a gradual lowering of level, whilst others remain stationary. The points of elevation occur between Calmar and Gefle, and as far north as Tornea; while the coast of Schonen is gradually subsiding. No traces of volcanic action are known to exist, except that lava occurs on an island not far from Bergen; and on a mountain in the Bukke Fiord, fire is said to appear sometimes. Earthquakes occur, though rarely.

Next to agriculture, the mines of Sweden constitute her chief source of wealth. At Kolmorden the limestone assumes the appearance of a fine green and white marble. The alumslate likewise yields something to the national industry; for in some places it is found to contain from 14 to 16 per cent. of combustible matter, so as to serve for fuel in preparing alum and lime. Coal, in small quantity, is found in the south; but iron is scattered in lavish abundance throughout the country; in various parts there are hills of the richest iron ore, and even islands of a similar description are met with on the coast. Iron, however, is not confined to particular spots, but is diffused over large spaces, and constitutes a kind of broad belt round the centre of Sweden. Copper is also found, but the mines are less productive now than formerly; and those of silver scarcely repay the cost of working them. All the mountains of Norway, and especially those of the south, contain a great number of minerals and metals, among which may be mentioned gold, silver, iron, copper, and cobalt. The silver mines are situate at Kongsberg, where large masses of the native metal have been found; and they also abound with other mineralogical curiosities. There is a gold mine at Edswold, in the district of Rommarge; and mines of lead and silver are wrought at Jarlsberg. The copper mines are chiefly situate in the northern parts of the kingdom, and the principal iron mines are in the south. The principal cobalt mines are at Modum and Fossum. There is a mine of plumbago at Engledal; there are alum mines at Egeberg near Christiania; and quarries of granite, marble, millstone, whetstone, slate, and clay, are wrought in various parts of the kingdom.

SOIL AND VEGETATION.—Sweden is not more fortunate in its soil than in its climate. It cannot boast of any of those deep rich alluvial deposits, which elsewhere usually occupy a large portion of low and well-watered countries. Coarse sand or gravel, but partially covered with a thin layer of fertile soil, forms in general the champaign country; and, besides the woods, which occupy more than three-fourths of its surface, a large proportion of the country is covered with lakes, morasses, rivers, and with inconceivable numbers of boulder-stones, or isolated rocks, of every size. The surface has been thus numerically represented:—Woods, 137,420; lakes, marshes, &c., 21,900; meadows, pastures, &c., 7,350; arable land, 3,480; total, 170,150 square miles. The soil of Norway is very similar in character to that of Sweden; in both, the vegetation being abridged by the length and the severity of the winter, the soil remains always poor; and the paucity of alluvial tracts, the prevalence of rock, seldom at any great depth, and often reaching the surface, materially detract from the quality, as well as the quantity of the soil. In some parts, however, it is very rich; and the valleys in particular are celebrated for their luxuriant fertility; but even there, much of the soil is thin, and obstructed by rocky knots rising above its surface.

As the more favoured portion of Scandinavia so nearly resembles Britain in respect of both soil and climate, much sameness in their vegetable products is to be expected; and accordingly, it is calculated that about three-fourths of the plants which grow in Sweden, and even in Lapland, are found in Britain. The distribution, however, of these, in a country extending through more than 15° of latitude, and beyond the polar circle, would be a curious subject of inquiry, did our limits permit us to enter into details. The Peninsula is particularly noted for its extensive forests, which consist principally of beech, oak, maple, spruce-fir, Scotch fir, aspen, and birch.

* "Scandinavia;" in the *Edinburgh Cabinet Library*, Vol. II. chap. viii. *Edinburgh New Philosophical Journal*, XXV. 292; and *Lyell's Geology*.

and not less than nine-tenths of the surface of the country are occupied with woodlands. These are, however, little better than a desert waste; for the timber from the inland and northern provinces is rendered valueless by the difficulty and expense of carriage; while in other places the remaining trees are small, and thinly scattered; and the towns are so inadequately supplied with wood for fuel, that it has been deemed requisite to prohibit its exportation. The very small proportion of arable land produces articles of the same kind and quality as those of Britain; but the production of each is affected by the elevation of the soil, as well as by the difference of latitude. In the southern districts of the country, an elevation of 500 feet above the level of the sea is found to have the same effect on the climate and vegetation as 175 miles of north latitude, a thousand feet are equal to 300 miles, and two thousand feet, to 630 miles; but the effect is of course proportionately more rapid and powerful as we advance towards the north. In the province of Schonen, grapes, mulberries, sweet chestnuts, walnuts, and melons, ripen in the open air; apples, pears, plums, and cherries, ripen as far north as 63°; gooseberries and many other kinds of berries, several degrees further. At the North Cape, potatoes are cultivated in the gardens; at Alten, 70° N. lat., barley is cultivated; and at Enontekeis, both barley and turnips, which have yielded nine good crops during the last thirty years (1800–30.) Rye ripens in Schonen as early as in Germany, but cannot be cultivated to advantage farther north than 66°; wheat and hops are limited to 62°; and oats seldom ripen in a higher latitude than 62°. Natural oak is not found farther north than 61°, but, if planted in a sheltered situation, will grow as far as 63°; ash and willow as far as 62°; elm and lime trees as far as 61°. Beech does not grow wild in Sweden farther than 57°; but in Norway it reaches two degrees farther; fir grows in Lappmark till within 2800 feet of the line of perpetual snow; spruce till within 3200. Within 2800 feet of the snow the pine ceases, and the birch alone forms the low woods, which with a short knotty stem and stiff rough branches, seems to set itself to resist the violence of the northern blasts. Its light green lively hue still continues to gratify the eye, after other trees have ceased; but it soon becomes so low, that a man standing upon a piece of turf can look over the trees. Proceeding farther north, or higher up the mountains, the birch forests become more rare; and the heat of the summer's sun being left to act without obstruction on the sides of the mountains, gives rise to a great abundance of alpine plants. The rein-deer moss covers the more arid plains of Lappmark. At 2000 feet below the snow line, even the low birch-woods disappear, and fish are no longer to be found in the waters. Bushes of a dark-coloured dwarf birch grow 400 feet higher, and raspberries ripen, but not beyond this point. Higher up, even the birches disappear; the streams are covered with brown, rather than green mountain plants; and the whortleberries are the only kind which ripen. The Laplanders do not willingly pitch their tents higher up than within 800 feet of the snow; for there food fails even for the rein-deer. In the higher plains, however, which are partly occupied by the perpetual snow, scattered mountain plants are seen here and there in the brown swampy ground; and even amidst the more level tracts of the snow itself, tufts of these may be seen shooting up from the springs which ooze from the rocks; and at 200 feet above the snow line, some lichens still sustain a feeble existence. But, after these, all vegetation ceases.

On the coast of Norway, vegetation is less curbed by the rigours of winter than in corresponding parallels on the shore of the Baltic; but, in consequence of the great general elevation of the country, cultivation is limited to a few places, such as the low strips of land on the shores of the Gulf of Trondheim, the Christiania Fiord, and the Scaggerack, and in the bottoms of the narrow valleys which penetrate the rocky mass. Round Christiania, in lat. 60°, oaks, ashes, elms, limes, and maple, are very common; at Laurvig, in lat. 59°, the beech continues to thrive; cherries, apples, pears, and apricots, ripen in the open air; and roses flower, though nearly a month later than in the north of Germany. Even in lat. 62° 47′, at Molde, pears, plums, and sometimes even chestnuts, ripen. Gooseberries and hazel-nuts are found at 65°, and oats, pease, beans, and flax, are cultivated up to the same parallel. Hemp and rye are grown to 66°; and the ash and spruce-fir reach the same point. At Trondheim, however, cherries and plums no longer ripen, pears and apples require great care; the oak scarcely continues to live; and to the north of the Trondheim Fiord, the climate and vegetation become truly arctic. The spruce-fir is scarcely found beyond 67°; the few remains of natural wood consist of birch and Scotch fir, and even these only along the deeper firths and large streams, where the climate is less rigid, and the winters milder and shorter than in many of the inland parts of Sweden; so that the hazel and some other hardy trees attain a higher latitude.

Extensive forests of fir and pine cover the eastern declivity of the Norrska-fiellen, and a great part of the mountainous country to the east of the range; and along the Trondheim Fiord, and in the valley of the river Namsen, there are also great forests of fir and pine.

ANIMALS. — These are nearly the same in Scandinavia as in the other northern countries of Europe. The principal wild beasts are:—the bear, a large and formidable animal, now mostly confined to the wilder and more northern provinces; the badger, found throughout the middle and the south of Sweden; the wolverine, a ferocious and untameable creature, found chiefly in Dalarne and the Lapland mountains, but even there now become very scarce; the wolf; five varieties of fox; the lynx; marten, otters, seals, hedgehogs, obters, squirrels; several species of mice and rats; the lemming, which at irregular intervals leaves its retired abodes in the mountains of Lapland and proceeds in countless numbers to the cultivated districts, where it commits great depredations, eating up the corn and grain, and every sort of vegetation in its way; the beaver, still found on the banks of the solitary lakes and rivers of Lapland; and the elk, now also confined to the least frequented districts. Of the domesticated animals the principal are: — the rein-deer, upon which the Laplanders chiefly depend for their subsistence and clothing; horses, beeves, goats, sheep, and swine. The horses are small, but swift and hardy, and those of Norway are remarkably sure-footed, a quality which admirably fits them for traversing the rocky mountain paths of that country; but the shortness of the summer, and the consequent difficulty of procuring a supply of food, limits the numbers of all the domestic breeds. The principal birds are: — the golden eagle; sea eagle; falcons of various kinds; the great horned owl, the snowy owl, and other varieties; the capercailzie, or cock of the woods, once common in Britain; the black cock, ptarmigan, partridge, woodcocks, snipes, swans, geese, ducks, widgeon, teal, and many others.

SWEDEN.

PEOPLE. — The inhabitants of Sweden may be divided into three races: — the *Swedes*, *Lapons*, or *Laps*, and *Fins*. 1. The *Swedes* are a branch of the same great family as the Danes and Norwegians, and speak a dialect of the same language, considerably modified, however, by long political separation, and by the national enmity which has existed between the people inhabiting the two sides of the peninsula. Books require to be translated from the one language to the other; but the vulgar tongue, the language of the peasantry in the two countries, differs not much more than broad Scotch from vulgar English. The roots of words, the construction and idiom are the same in both languages, or have a common origin. Swedish prevails from the Sound to the river Kalix, at the head of the Gulf of Bothnia, where it meets the Quan or Finn language, and is spoken by about 3,100,000 people. The Swedes are represented as a brave, hardy, generous, and enterprising people; distinguished by a happy union of courage and steadiness, possessing fine genius, and natural probity of disposition. In Schonen, Gothland, and the adjoining provinces, light hair, blue eyes, and fair complexions predominate; the men have faces somewhat pale, high foreheads and long chins; are of a middle size, with a muscular frame, and mild aspect. The Dalecarlians, or Dalesmen (*i. e.* people of the valleys, or, as we should say in Scotland, the Highlanders), who live to the north-west of Stockholm, are a hardy, bold, and industrious race; have always been remarkable for their loyalty, and in consequence of their tried patriotism, and the numerous services which they have rendered to the government, they enjoy the privilege of taking the king's hand whenever they meet him. But notwithstanding their natural good dispositions, it is a singular and embarrassing fact, that the Swedish nation, isolated from the mass of the European population, and almost entirely agricultural or pastoral, having no great standing army or navy, no extended commerce, no afflux of strangers, no considerable city but one, and having schools and universities in a fair proportion, and a powerful and complete church establishment, undisturbed in its labours by sect or schism, is, notwithstanding, in a more demoralized state than any other in Europe, more demoralized even than any equal portion of the dense manufacturing population of Great Britain. — (*Laing's Sweden*, 108.) Drunkenness seems to be their prevailing vice; brandy is resorted to on all occasions. This unfortunate habit is the fruitful source of many evils both moral and physical; and Forsell ascribes to it more than three-fourths of all the crime, want, and misery which prevail in the country. In 1835, one person out of every 114 of the population was accused, and one out of every 140 convicted, of some criminal offence; and in the five years from

830 to 1834, one person in 49 of the inhabitants of towns, and one in 176 of the rural population, had been punished each year for crimes. There was no rebellion in the country, nor resistance to obnoxious laws, as in Britain and Ireland; but, on the contrary, all the offences recorded, involved greater moral delinquency than the breach of a regulation or conventional law of the State.—(*Laing*, 110.)

In 1751, the population amounted to 1,785,727; in 1800, to 2,347,303; in 1820, to 2,584,690; in 1839, to 3,111,067. If the population maintain its present rate of increase it will double itself in about fifty years. It is, however, very unequally distributed over the country, becoming always thinner towards the north. In Malmolan it is about 111 to the square mile; in Gothia, it varies from 34 to 68; in the central provinces, from 11 to 45; in Norrland, from 2½ to 5; and in Lapland it is less than 1. The relative population of the whole kingdom is only about 18 to the square English mile. The total number of towns does not exceed 86; and their inhabitants in 1830 amounted to 280,269, or only a tenth of the whole population.

2. The *Laplanders*, or *Laps*, inhabit the northern provinces of Sweden, as well as of Norway, and have been represented as a people of short stature, with a swarthy or yellowish complexion, and disagreeable physiognomy. In the northern parts of Lapland, however, the people are much taller than in the south, yet their height does not exceed 5 feet 3 inches; and their dark complexion seems to be as much the result of constant residence in smoky huts as of natural constitution. The Lap mountaineers, who live almost constantly in the open air, have a skin only slightly dark; the greater part of the females are even tolerably fair; and among both sexes are seen persons of as agreeable complexions as among the other European nations. Their good temper is unfailing; and their cheerfulness never forsakes them. Their honesty is proof against every temptation; robbery and murder are crimes almost unknown; they are laborious and habitually temperate; but cannot resist the temptation of drinking strong liquors when they come in their way. The Laps are distinguished into four classes:—mountaineers, foresters, fishermen, and beggars. The first live by the produce of their herds of reindeer; spend the summer among the mountains, and the winter on the plains, transporting from place to place their families, their herds, and their huts. The second class are stationary; their herds of reindeer are less numerous than those of the former; and they occupy themselves in the cultivation of land. The fishermen have still fewer animals, and while they are themselves employed in fishing, they send their wives and children to take care of their herds on the mountains. The begging Laps live by charity, or by hiring themselves as labourers to the Swedish peasantry. The rigour of the climate, the misery which they frequently suffer, and the general unfruitfulness of the women, prevent the increase of the population of these wild regions.

3. Few of the *Finns* are now subject to Sweden; but in the northern provinces of Norway they have extended themselves as colonists. They are an industrious, robust people, differing, morally and physically, from the Laplanders, as much as the grown man from the child; though they are probably descended from the same original stock. The Laplanders still call themselves Finns, and are so called by the Norwegians; and in their own language both people call themselves *Suome* or *Same*, and the old Russian name for them both is *Sum*.

RELIGION.—With the exception of a few individuals in Stockholm and the other principal towns, the Swedes are all Lutherans, and Lutheranism is the established religion of the State. Other sects are now allowed the free exercise of worship; but Catholics and all other dissenters are excluded from the Diet and from the higher offices of State. In the whole kingdom there are 2490 congregations, viz. 1147 country parishes, and 129 town churches, with 1214 annexed chapels in the larger parishes. The whole establishment consists of 3193 clergy, and 3753 sextons or parish-clerks, organists, and church servants. The hierarchy consists of one archbishop of *Upsal*, and eleven bishops, viz. of *Lund*, *Gotheborg*, *Wexio*, *Calmar*, *Linkioping*, *Skara*, *Carlstadt*, *Wisby*, *Westeraas*, *Strangnæs*, and *Hernosand*; 70 archdeacons, and 102 probsts (provosts or deans.) The archbishop's income is rated at about £2000 sterling a-year; the bishops at more than £600 each; and the archdeacons and probsts, from £400 to £700 each. None of the inferior clergy have less than £120, while many have as much as £300, besides parsonages and glebe lands. The sextons have also manses and livings furnished by their parishes. The clergy as a body have been always distinguished for piety and morality; and yet among their people religious feeling and moral purity are at a very low ebb; their religion, indeed, has become little better than a system of rites and ceremonies. There is, however, a spirit of religious enthusiasm spreading in the north of Sweden, especially

among the new colonists, or squatters in Lapland, which the clergy have attempted to put down and extinguish. These religionists are called Læseren, or readers, from their reading the Scriptures; but they have not as a sect any internal communion. They are, however, numerous; their numbers are said to be increasing, and their meetings for preaching are attended by people from great distances. The patronage of the church is not entirely at the disposal of the Crown. Candidates are appointed by the consistory to preach before the congregation of the vacant cure; and academical distinction, long standing in holy orders, and in the service of the church, are taken into consideration, and allowed a preference. Of three candidates thus proposed, one is approved of by the congregation, and appointed by the Crown, unless where private favour and influence interrupts the ordinary course, as often happens. Bishops are appointed on a similar principle, the clergy voting for those of their own body whom they think best qualified, and the Crown generally appointing one of the three who have the largest number of votes. The Catholics, who are all foreigners, throughout the kingdom do not amount to 2000, the greater part of whom reside in the capital. The Swedenborgians, the only sect which the country has produced, are also comparatively few; and the Jews, who scarcely exceed 1000 individuals, have four synagogues, at Stockholm, Gotheborg, Norrkoping, and Karlscrona.

Education. — Of the whole population, including even the Laps, it is reckoned, that the proportion of grown persons unable to read is less than one in a thousand. This general diffusion of elementary education is ascribed to the zeal of King Gustavus Vasa, (1523–1560), and his immediate successors. John III., in 1574, ordered that the nobleman who had no knowledge of book learning should forfeit his nobility; Charles XI., in 1684, required the clergy to have every Swedish subject taught to read; and made it a law that no marriage should be celebrated unless the parties had previously taken the Lord's Supper; and that none should be admitted to the communion-table who could not read and was not instructed in religion. Parish schools, however, are found only where there happen to have been lands or rents bequeathed for their endowment; and these in some parishes are ambulatory, in others fixed. It is supposed that more than the half of all the parishes have no schools; but the deficiency is supplied by the people themselves, who teach their children at home, in the leisure hours of their long winters. The king, however, in his speech at the opening of the present Diet, 1840, has recommended the establishment of a primary school in every parish. In the provincial towns there are gymnasia, or high schools, in which the youth are prepared for the universities. They are under the care of the bishops, and, besides the higher branches of Greek and Roman literature, their course often embraces the oriental languages and the leading doctrines of theology. There are two universities, one at Upsal, and the other at Lund. In these the teachers may be divided into three classes: — 1. Professors; 2. Adjuncts, or privileged teachers in different sciences, who give instructions privately or publicly in detail to the students, and who are expectants of professorships; and, 3. The masters of modern languages, exercises, and other inferior branches. Of the theological faculty there are four professors at Upsal, and four at Lund; of the judicial faculty, two at each; of the medical and surgical, five at each; of the philosophical and literary, fourteen at Upsal, and ten at Lund. Each faculty confers degrees, after examinations sufficiently strict to make an Upsal degree a highly respectable honour for men of science; and the degrees are conferred in different terms, denoting the merits of the candidate, as granted with applause, commendation, or merely by sufferance. The instruction consists of public or private courses of lectures, for the former of which the student pays nothing, and of repetitions, disputations, and written treatises for examination by the professors and adjuncts. Before a student is admitted, he undergoes an examination by the adjuncts, or younger teachers, as to the knowledge he has acquired at the gymnasium; and if a youth not duly qualified is sent up to college, the rector and teachers of the gymnasium subject themselves to a professional rebuke. The revenues of the University of Upsal are derived partly from estates bestowed upon it by the Kings Gustavus-Adolphus and Charles IX., and by Queen Christina, and partly from crown tithes; those of Lund are derived from tithes only. The highest salaries of the professors amount, on an average, to £194 sterling yearly; the adjuncts and lower teachers have only about £42 sterling yearly; but they receive fees from those who take instruction from them. No person can enter into the clerical, legal, or medical professions without taking his degree; and in the department for mines and other branches of government business, a degree in philosophy is required before a person can study, as a candidate for office, the particular science required in these employments. The stu-

dents on the books at Upsal in an average year amount to 1453, of whom 336 are students of theology; 325 of law; 86 of medicine; 365 of philosophy; and 341 who have not fixed on a profession. The students on the books at Lund amount to 632; of whom 141 theology; 105 law; 56 medicine; 169 philosophy; and 161 not fixed to a profession. But of the numbers on the books, only 844 are present at Upsal, and 421 at Lund, in each year. The great majority of these are the sons of peasants, citizens, and clergy; but of the nobility not one-half take a high university education; yet all the high places in the state, and even the offices in which uneducated men are not qualified to act, are filled as a matter of right by this uneducated class. — (*Laing*, 240, &c.) The total number of professors, teachers, and schoolmasters in the kingdom is reckoned to be 763.

GOVERNMENT. — The government is a sort of mixed constitution, in which the executive and administrative departments are managed by an hereditary king and his servants, while the legislative is vested conjointly in the King and a Diet of four chambers, elected by the nobles, clergy, burghers, and peasants. The number of noble families in the kingdom is reckoned about 2400, the head of each of which is by right a member of the Diet, but seldom more than 400, and rarely 500, take any part in its proccedings. The clergy have 60 representatives, including the archbishop and bishops, of whom the Primate is always president. The burghers are elected by 85 cities and towns; Stockholm returning 10, Gotheborg 3, Norrkoping 2, and the rest 1 each. The peasantry have between 140 and 150 representatives, chosen by districts; and these, as well as the burghers, are required to possess a certain amount of qualification in property, and each of their chambers has a president appointed by the King. During the session each member of the last three orders receives a small pecuniary compensation, paid by his constituents, the amount of which is voluntary. The Diet meets at intervals of five years, and then sits for three months certain; but more time is generally required for the dispatch of business. The majority of each chamber determines the questions brought before it, and a majority of the four orders settles the determination of the Diet, except in propositions for altering the fundamental laws, when unanimity of the orders is required; and no such measure can be carried in the same Diet in which it is proposed, but is reserved for deliberation at the next Diet. The King has a veto upon their acts, and the right of proposing such measures as he may deem beneficial to the country, and may call together an extraordinary Diet whenever he may think it necessary. Practically, the power of the Diet resides in the nobility and clergy, who exercise it in such a way as tends most to promote their own interest; and, altogether, the constitution is a machine, of which the parts are curiously constructed for checking each others movements, while the propriety, or even almost the possibility, of their moving together, has been lost sight of. Many of the constituencies consider the Diet as little better than a mockery of free institutions, which they would willingly renounce by not electing at all, were they permitted to do so. Though the form and the elements of a free government certainly exist, which may in time grow into a popular constitution, such does not at present exist. Between the nobility and the peasants there is no sympathy; the former are almost entirely dependent for the means of subsistence upon public or official employments, and consequently in complete subservience to the Crown, while the peasants are also too poor, and their life too laborious to allow them much time or opportunity for attending to public business. In the Diet before the last, consisting of 718 members, only 164, viz. 17 nobles, 25 burghers, and 122 peasants, were not visibly connected by office with the executive or the Court. The House of Nobles represents about 13,500 individuals, and property valued at £16,562,500; the House of Clergy, 14,000 individuals, and £221,000; the House of Burghers, about 66,000 individuals, and property of £7,730,000; and the House of Peasants, 2,000,000 of individuals, and £38,646,000. Besides these classes, there is a fifth class in Sweden, consisting of 72,000 individuals, with property valued and taxed at £13,029,000, who are not represented at all. These are people who have acquired money, and purchased estates for their families. They are not peasants, nor burgesses, clergy, nor nobles, and, consequently, are neither represented in the Diet, nor eligible as representatives.

But the most important branch of the constitution is the Council of State, which consists of a minister for justice, one for foreign affairs, six other councillors, and the chancellor of the court, and is attended by the four secretaries of state, who have the four departments of home affairs; military and naval affairs; finance, trade, customs, and post-office; and affairs of the church, general education, and the poor. The King can do nothing except in military and diplomatic affairs, without consulting

this council, which is obliged to keep a protocol of its proceedings, in which each member has a right to explain his opinions. The King alone has the right to determine, after hearing the opinion of the council; but, should his determination be contrary to law, the members are bound to insert their protest in the protocol, for which they are answerable to the Diet. In the military, diplomatic, and higher offices of State, persons holding public employments may be dismissed by the King; but in all the lower civil offices no functionary can be dismissed without inquiry and judgment given by the courts of law. But the judges of the supreme court may be dismissed or continued in office by the Diet, who at each session elect a jury for inquiring into their conduct and qualifications.

The law is administered by 264 courts of first instance, called Hered's Courts, one for each of the hereds or districts into which the country is divided. In some of the towns there are two of these courts; and there are, besides, a mining-college court, two academical courts, and some other local burgh courts. From these primary courts appeals are carried to the Lagman's Courts; and from these again to the Hof or Supreme Courts, of which there are three, called the Swea or Swedish, the Scania, and the Gotha, established in different parts of the kingdom. There is no direct appeal from the decisions of these Hof Courts; but, by petition to the King, their decisions may be revised in the Council of State, and confirmed or reversed. All criminal cases affecting life or property are tried in the Hof Courts, no lagman having any criminal jurisdiction. The ecclesiastical courts judge in cases of divorce, of which the average annual number is 164. The executive and administrative functions of judges and magistrates are kept quite distinct, and are not vested in the same persons as in Britain. The judge has nothing to do with the apprehending, safe keeping, or accusing of the criminals in his district: the proper executive officers are the *fogden* and the *lansmen*.

FINANCES. — Relatively to its means, Sweden is much more heavily taxed than either England or France, yet the public revenues raised by taxation do not amount to £2,000,000 sterling. According to the report of 1842, the sum was 10,742,880 dollars banco, or £1,611,432 sterling, of which more than one half was raised by a direct land tax, the remainder by customs, and other indirect means. But, notwithstanding their limited means, the Swedish government have contrived, since 1814, not only to pay off the whole of their foreign debt, and a great part of their home debt, but also to expend £3,200,000 on public works. The pressure of the public taxes is, however, very unequal. The agricultural, that is to say, the poorest and least influential class, are overloaded, and obliged to pay annually, in public and local taxes, at least one third of the produce of their land. If, moreover, it be considered that these twenty millions of dollars are levied in a country where there is scarcely any commerce, and very little money in circulation, some notion may be formed of the oppressiveness of their public burdens.

ARMY AND NAVY. — The standing army amounts to 2580 artillery, 4705 cavalry, and 25,409 infantry; total, 32,694; and consists of two kinds of troops, the enlisted and the indeldta. Of the former class there are only about 6000, all of whom are stationed in the capital or its environs. The indeldta soldiers are a sort of military colonists, drawn from and maintained by the various districts of the kingdom. They are regularly trained to military duties, for which purpose they are periodically assembled in companies and regiments; but are permitted to marry, and, when not on active service, support themselves and their families on their little farms. Each soldier has a house, barn, cow-house, and six acres of land for his subsistence. These men, when not engaged in war, cultivate their land, or are employed by Government in constructing roads and fortifications, draining marshes, digging canals, or executing other works of public utility, and receive no pay except when in actual military service. But, besides the regular army, there is also the beväring, or militia, consisting of every male between twenty and twenty-five years of age. They are regularly exercised about three weeks every year, and liable to be called into active service in case of war. This body amounts to 106,603 men, making the whole disposable military force 139,294. No man is admitted into the standing army or the navy without a certificate of good character from the clergyman of his parish; the consequence of which regulation is, that there are fewer depredations committed by the Swedish soldiers, either at home or abroad, than by those of any other nation. In 1836, the total number of officers and men employed in the military navy was 25,691. The principal part of the navy consists of 250 gun-boats, for the protection of the coasts; besides which there were also, in 1833, 11 ships of 74 and 84 guns, 8 frigates, 4 cor-

vettes, 6 brigs, with several smaller vessels. There are three naval stations for ships of the line, at Stockholm, Gotheborg, and Karlscrona; the flotilla of gun-boats is stationed chiefly at the two former places, which, communicating by the great Gotha canal, afford the means of uniting, without exposure to disasters by sea, or attack from an enemy. The seamen are drawn by conscription from the maritime provinces; each district on which the lot falls being required to furnish a seaman, to assign to him a portion of land which he cultivates, and upon which he lives when not on active service. When in port or on service the seamen receive pay from the Crown. The total naval expenses do not exceed £100,000 a-year.

PRODUCTIVE INDUSTRY.—1. Since the beginning of the present century the *agriculture* of Sweden has experienced great improvement; the Swedes have become exporters of grain to a considerable extent; and as seven-ninths of the population are engaged in the cultivation of the soil, and great part of that is still unproductive from want of cultivation, the quantity might be increased many fold. The whole annual produce of the soil is estimated at £9,937,500. Within a few years land has risen considerably in value, from the exertions of the agricultural societies established in the provinces, and the great interest which the landed proprietors now take in the management and improvement of their estates. Every proprietor or farmer has a right to distil spirits, the refuse of which alone enables him to keep a large number of cattle, whereby the quantity of dung is very much augmented. The distiller is not bound to use any particular kind of grain, and therefore a considerable quantity of potatoes is used for that purpose. The cultivation of the potatoe has been indeed the mainspring in the improvement of Swedish agriculture; not only has it done away with the necessity of using the bark of trees as a miserable substitute for bread, but has occasioned the public and private magazines to be completely filled with grain. The greatest difficulty which cultivators have at present to contend with, is the want of a market for their surplus stock.—*(Stephens' Quarterly Journal of Agriculture*, VI. 100, *&c.)* Both horses and horned cattle are small in Sweden; the former, however, are active and spirited, and the latter afford excellent milk and beef. The sheep are generally of an inferior kind, but great pains have been taken to improve them by crosses on the Spanish, French, and English breeds. Towards the 63° sheep disappear, and are superseded by goats, which are most numerous in the woodland districts of Dalerne and Nordland. The seed-time is in May, the harvest in August, and as the fine weather is short, and warm, the labours of the farmer are then very constant and fatiguing; while a great number of people are required to get in the crops, for whom there is no employment during winter, when the country is all covered with snow. This will ever remain an obstacle to agricultural improvement, especially in the northern districts. The average of the harvests throughout the kingdom, for seven years, has been found to be three good, three middling, and one a failure; the average rate of fecundity is $4\frac{3}{4}$ grains for one.

2. *Fisheries.*—Both the sea and the fresh waters swarm with fish, which afford employment and subsistence to many of the inhabitants. The fresh water contains perch, pike, salmon, trout, grayling, char, roach, bleak, and eels; but of all these, the salmon is the most important object of industry and trade. They are more abundant in the northern rivers than in those of the south, and on most of the rivers fisheries are established. The sea fish are not less numerous or important. Herrings are sometimes caught in incredible numbers at Gotheborg, though at other times they entirely forsake the coast. In the Baltic, the stromming fishery is a very important branch of industry; in the quantity of food it produces, in the amount of capital and industry which it employs, and in the scale and outfit connected with it, it may bear a comparison with the herring-fishery elsewhere. The stromming is about the size of a sprat, but a much more delicate fish. They are cured like herrings; and a barrel of salted stromming is as necessary for every household on the Swedish side of the Peninsula, as a barrel of herrings is on the other. They are also used extensively over all Finland and the north of Russia.

3. *Mines and Minerals.*—Next to agriculture, the mines of Sweden form the chief source of her wealth. Throughout the kingdom, iron exists in great abundance. The mountain Gellivara, in Lappmark, 1800 feet high, is one mass of the richest iron ore; but its situation beyond the polar circle (in lat. 67° 20′ N.), far from the sea, and in an unpeopled wilderness, deprives it of its real value. In various other places, however, there are similar hills; and even islands of compact iron ore are met with on the coast. About the year 1683, the quantity of iron forged in Sweden, in one year, amounted to 9690 tons; but in the course of the next century a great increase

took place. Between the years 1751–60, the average annual produce amounted to 328,766 Swedish pounds, and it has continued very nearly the same to the present time; though the trade is represented as being now in a state of great activity and prosperity. The quantity of bar-iron produced in the year ending 1st November 1839, is stated at 276,000 skip pounds, and of manufactured iron, 33,600; which, added to 11,600 of the latter, and 126,700 of the former, on hand at 1st November 1838, made a total of 448,000 skip pounds. Of this amount, 304,896 pounds were exported; 283,500 in the shape of bar, and 21,390 manufactured; the prices during the year having been ten bank rix dollars, or 25s. 10d. sterling the skip pound, which is equal to 280 lbs., or a quarter of a ton avoirdupois. The forests of Sweden occupy more than one-half of its surface, and the abundance of wood thus supplied is of the highest utility in working their mines and smelting the ores. Swedish iron is superior in ductility and malleability to any other — a superiority which is attributed, in part, to the use of wood instead of coal or peat in the process of smelting. The number of mines in Sweden is 586, and of these no fewer than 361 are close together in in the heart of the kingdom, in Nerike, Westmanland, and part of Dalarne. Danemora, the principal iron mine, produces yearly about 4000 tons of metal, which is particularly adapted for the manufacture of steel. Next to iron, copper forms the most important of the mineral riches of Sweden. The principal mine has long been at Fahlun, but the produce scarcely exceeds 1,000,000 lbs. The most important of the other copper mines are those of *Hakanbo*, in Nerike; *Nyakopparberg*, in Nyköpingslan; *Atvedaberg*, in Linköpingslan; *Areskuta*, in Jamtland; and *Ryddarshytta* and *Bastnas*, in Westeraaslan. The whole copper produced in Sweden in 1824 was 814 tons, of the value of £51,777 sterling. Gold is also found at Fahlun, and in some other places, where the produce was too small to pay the expense. Silver is likewise produced, to the extent of about 3000 marks annually; but the expense of working the mines is so great, that it is proposed to relinquish them. Fahlun likewise produces sulphur and vitriol; in Schonen, near Helsingfors, there is a small bed of coal; and cobalt, to the value of about £12,000 sterling, is also produced.

4. *Manufactures.*—These are in a very low state. Every art and trade has its own corporate rights and monopolies, which operate as a complete bar to improvement; and of the total population only about one-seventieth part are engaged in manufactures and trade. Coarse linens are the chief manufacture. Machinery for spinning wool and cotton has been introduced, but the experiment is too recent to warrant a decided opinion as to its ultimate success. The other articles of manufacture are such common articles as are required to supply the ordinary wants of the people.

5. *Commerce.*—The general trade of Sweden is in nearly as low a state as its manufactures. The principal exports consist of articles of native produce, in their raw or manufactured state: iron ranks first, then timber, copper, tar, and grain. The principal imports are sugar, coffee, tobacco, salt or smoked fish, salt, leather, hemp, silk, cotton, and wine, chiefly articles of domestic comfort or luxury. Mr. Laing states the amount of the mercantile shipping at only 30,439 tons (p. 157); but Forsell states it as having been, in 1831, 137,514 tons, or 1122 vessels. The principal mercantile ports are Stockholm and Gotheborg. The currency consists almost exclusively of paper money. The first bank was established in 1657, and for some time conducted its business on the right principles of banking; but it was a government institution, and, in the urgent necessities of the State, the temptation to over issue was too great to be resisted. Vast issues were made without adequate means of redemption, till at last the value of the bank paper fell to one-third of its nominal value in silver. This rate of depreciation is now permanent; and the consequence is, that gold and silver have almost entirely disappeared; scarcely any coin except small pieces of copper is to be seen; and the country is suffering under the evil of a universal paper currency, consisting of bank notes of the smallest denomination, some even so low as six cents.

Internal Communication.—1. *Roads.* These are in some instances made by government, but in general they are maintained by the farmers and landowners of each province, who meet at stated times, and assess themselves for the purpose. They are generally kept in very good order. On all the great roads, at every mile or mile and a half Swedish, or from 7 to 10 miles English, there is a post station, to which the peasants are obliged to bring their horses on certain days by rotation, to be in waiting to convey travellers, who are generally carried in carts or carioles.

2. *Canals.* For internal water communication Sweden has remarkable facilities in her four great lakes, as well as in her rivers and numerous canals. The principal canal is that of *Gotha*, which has been formed at the expense of £720,000 sterling, to connect the Wener and Wetter lakes with the Baltic, near Soderköping. It was opened in 1832; is 80 feet wide, and 10 deep, so as to admit of the passage of vessels of considerable burden. The *Canal of Trollhatta*, commenced in 1793, and finished in 1800, was formed to avoid the falls of the Gothaelf, and consists principally of a series of locks rising above each other, on the face of the declivity over which the river falls. It was dug out of the solid

rock at great expense. These two canals, with the Gotha river, and the intervening lakes, form a complete navigable communication across the middle of Sweden; and their advantages will no doubt be found far more than commensurate with the expense. The *Canal* of *Arboga* is the oldest in Sweden, and connects the lake Hielmar with the Mälar. The *Canal of Stromsholm*, in the government of Westeraas, forms a communication between the Hielmar lake and the lake of Barken, on the borders of Storra-kopparberg. The *Canal* of *Sodertelge*, finished in 1819, connects the Mälar with the Baltic to the north-east of Stockholm. There are some other less important canals, such as that of *Wadd*o, which shortens the navigation from the Gulf of Bothnia to the Baltic, and enables vessels to avoid the dangerous navigation through the Aland islands; and the *Canal* of *Almare Stak*, undertaken to facilitate the navigation between Stockholm and Upsal. Several other works of the same kind have been projected, and some even commenced, particularly to render the rivers of Norrland navigable, so as to give access to the immense forests of that region.

ADMINISTRATIVE DIVISIONS. — Sweden is divided into twenty-four *lans*, or governments, which are subdivided into *fogderier*, or districts. Swedish geographers, however, divide the country into three large regions, namely, *Norrland*, or the North country; *Svealand*, or Sweden proper; and *Gothaland*, or Gothia; each of these comprising several lans, as stated in the following table:—

Governments.	*Ancient Provinces.*	*Cities and Towns.*
SVEALAND.		
Stockholm, . .	Upland and Sodermanland,	STOCKHOLM, Carlberg, Marieberg, Drottningholm, Nortelge, Sodertelge, Vaxholm.
Upsala, . . .	Upland, ...	Upsala, Sigtuna, Lofsta, Elfkarleby, Sodersforc, Danemora.
Westeraas, . .	Westmanland, . .	Westeraas, Sala, Norberg, Arboga, Köping.
Nyköping, . . .	Sodermanland, . . .	Nyköping, Strengnass, Gripsholm, Eskilstuna.
Oerebro, . .	Nerike and Westmanland,	Oerebro, Nora, Askersund.
Carlstad, . . .	Warmeland, . . .	Carlstad, Christinehamn, Ombergshedcn, Oskarstad or Arvika, Philipstad.
Storra-kopparberg, .	Dalarne, ...	Fahlun, Hedemora, Avesta, Mora, Husby.
Geflebord, . .	Gestrikland and Helsingland,	Gefle, Soderhamn, Jarsso, Huddiksvall.
GOTHALAND.		
Linköping, . .	Oestergothland, . .	Linköping, Norrköping, Wadstena, Soderköping, Medevi, Skeninge, Motala.
Calmar, . . .	Smaland, ...	Calmar, Westerwik, Borgholm.
Jonköping, . .		Jonköping, Ædelfors, Ekesjo.
Kronoberg, . .		Wexio.
Blekinge, . . .	Blekinge, ...	Carlscrona, Ronneby, Carlshamn.
Skaraborg, . .	Westergothland, . .	Mariestad, Lidköping, Skara, Vanas.
Elfsborg, . .	Dasland and Wr. Gothland,	Wenersborg, Boras, Trollhattan, Amal.
Gotheborg and Bohus, . .		Gotheborg, Marstrand, Ny-Elfsborg, Uddevalla, Stromstad.
Halmstad, . .	Halland, ...	Halmstad, Warberg, Laholm.
Christianstad, .	Schonen, ...	Christianstad, Engelholm, Cimbrishamn.
Malmohus, . .		Malmo, Ystad, Lund, Landscrona, Helsinborg, Ramlosa.
Gottland, . . .	Gottland island, . .	Wisby.
NORRLAND.		
Norrbotten, .	Westerbotten & Lappmark,	Pitea, Lulea, Arjeplog, Gellivara, Jukkas, Jarvi, Umea, Asele, Sorsell.
Westerbotten, .		
Wester-Norrland, .	Medelpad and Angermanland,	Hernosand, Sundsvall.
Jamtland, . .	Jamtland and Herjeadalen,	Oestersund, Hede, Ijusnedal.

§ *Cities and Towns.*

1. *Svealand.* — STOCKHOLM, the capital of the kingdom, is situate upon a strait which connects the Mälar Lake with an arm of the Baltic, in north lat. 59° 20′, and east long. 8° 13′. The principal public buildings are placed upon three islands, named the Stockholm (castle island), Riddarholm (Knight's island), and Helge-ant's holm (Holy Ghost Island), connected with each other and with the mainland on both sides by several bridges, through which a current is constantly flowing from the Mälar to the sea. The greater part of the private houses are built on the mainland, which, on the north side, slopes gradually and beautifully backward from the shore, but, on the south side, rises in bold abrupt cliffs, where the white houses nestle among shading trees. There are many public buildings, bridges, squares, and monuments, in good taste; and the fine churches, quays, and royal palace, give the city an air of magnificence; but the private houses are, in general, of very ordinary appearance. In the centre of the town the streets are narrow, crooked, and dirty; but elsewhere they are wide and straight. The palace is a modern building, in the Italian style, and for architectural beauty and effect surpasses all the other city palaces in Europe. It stands on the Stockholm. The other principal buildings are the cathedral, the bank, and the house of the Diet. The city contains a great number of scientific and literary establishments, the principal of which are:—the academy of sciences; the academy of belles-lettres, history, and antiquities; the Swedish academy, for the cultivation of the Swedish language and poetry; the agricultural academy, the royal school of engineers; the college of mines; the Carolinian medico-chirurgical institute; the royal library, one of the richest in the north of Europe, &c. The population in 1830 amounted to 80,621; but in June 1838, only to 77,500. On an average of ten years preceding the latter date, the deaths exceeded the births by 895 yearly; and yet the city does not appear to occupy an unhealthy situation, nor are the people of the lower classes over-crowded or badly lodged. In 1838, the capital contained only 2306 persons of the manufacturing class, including their labourers; 781 merchants, or wholesale dealers; 1817 retail shopkeepers; 1036 tradesmen of all kinds, employing 1605 journeymen, 2099 apprentices, and 465 other persons; and 721 seamen, including shipmasters; total, 10,819 persons living by productive industry. The consuming class consisted of 2794 persons in civil, 4258 in military, and 544 in clerical and educational employments; 1556 nobles, of both sexes; and 11,461 persons of condition, of both sexes, having property; altogether, 31,432 persons who had a visible means of subsistence; leaving 46,068 persons without capital, trade, or fixed means of living. — *Laing*, 75, &c.

Upsala, 41 miles N.N.W. of Stockholm, built on a gentle height, and part of an adjoining plain, in a very level and fertile country, is one of the most beautiful old-fashioned cities in Europe. The

larger portion of its 15,000 inhabitants depend more or less on the ancient and highly celebrated university, which still flourishes among them. Only a few are engaged in manufactures, and in the little trade carried on by means of the Sala, a sluggish stream which runs through the city towards the Mälar, and affords the means of steam navigation to Stockholm. The new university is a handsome building in the simple Florentine style, built of fine freestone; the cathedral is a lofty building of brick, but the finest of all the ecclesiastical buildings in the kingdom. The university was founded in 1478, and is usually attended by 800 students. *Old Upsala (Gamla- Upsala)*, consists chiefly of a few huts grouped round a set of tumuli or barrows, which are popularly considered to be the tombs of Odin, Thor, and Freya; and, on the top of a little mount close beside them, stands a venerable church, said to be 1800 years old, and to have been a place of pagan worship during many centuries. — *(Bremner.)* *Danemora*, 25 miles N. by E. of Upsala, in a level and well cultivated country, is noted for its iron mines, which yield on an average 4000 tons of metal yearly, and have been equally productive since their first discovery in 1470. Others of the Swedish mines are said to yield a larger quantity, but their iron will not bear comparison with that of Danemora, the superior quality of which is ascribed by Berzelius to the presence of the metal Silica, by others to the presence of Manganese, while many assert that it is almost entirely owing to the excellence of the process by which it is made. The mines are the property of a company, which ranks among its members some of the wealthiest men in Sweden. *Sigtuna*, a very ancient town 17 miles S. of Upsala, still contains the ruins of pagan temples. *Oerebro*, at the west end of lake Hielmar, a pretty little town, with an agricultural society and other establishments. *Arboga*, a town with 3000 inhabitants, to the west of the Mälar Lake, is the entrepot of the iron to be shipped for Stockholm. *Carlstad*, at the north side of the Wener Lake, upon a small island, formed by the two mouths of a magnificent river, the Klar-elf, is rather a handsome town, with some trade, and 2500 inhabitants. *Fahlun*, 120 miles N.W. of Stockholm, consists of long, silent, and wide streets, with good houses, and 4000 inhabitants, in the midst of a region of copper-mines, extending about 28 miles in length, by 7 in breadth. This wide space is inclosed and partly penetrated by rocks of reddish granite, which towards the middle gradually merge into a micaceous rock, the greater part of which is composed of iron and copper pyrites. For many centuries these mines were perhaps the most productive in the world, yielding annually eight millions of pounds of pure metal. Their present annual produce is thus estimated: — Copper, 4500 skip pounds; gold, 250 ducats; silver, 500 marks; lead, from 100 to 150 skip pounds; vitriol, from 600 to 800 tons; ochre, generally 1000 tons; brimstone, 20 to 30 skip pounds. The ore is not rich; the best is said to yield 20 per cent.; but the poorer sort only 1½ per cent.—*(Bremner).* The number of mines does not exceed 500.—*(Laing.)* *Gefle*, 96 miles N. by W. of Stockholm, a seaport town on the Gulf of Bothnia, with fine quays, two churches, several broad, good streets, and 8000 inhabitants. Next to Stockholm and Gotheborg, it is the most important trading town in the kingdom. *Waxholm* or *Vaxholm*, a small town, with batteries and other military works, the seaward key of Stockholm.

2. *Gothaland.* — *Gotheborg (Gottenburg)*, a large commercial town on the left bank of the Gotha-elf, near the sea, 245 miles W.S.W. of Stockholm. It stands in a wide hollow surrounded by rocky heights, and consists of regular, wide, and paved streets, with lofty flat roofed houses, all built of stone, or well stuccoed brick. It is the residence of a bishop, and a military governor; has 25,000 inhabitants, and a very active commerce. The Gotha is navigable from the sea to the falls of Trollhattan, where the navigation is continued by a canal, alongside of the river, which here rushes down a deep gorge, a height of 190 feet; and between the canal and the river there is a range of saw-mills, belonging to a Glasgow company. *Linköping*, 105 miles S.W. by W. of Stockholm, near the south side of Lake Roxen, is a well-built episcopal city, with considerable trade, and a cathedral considered the finest in the kingdom, after that of Upsala. *Norrköpping*, 83 miles S.W. by W. of Stockholm, is a flourishing commercial and manufacturing seaport town, on an arm of the Baltic, with 10,000 inhabitants. Its cloths are considered the best in Sweden. *Jonköping*, the seat of the Hof-court of Gothaland, is a considerable town, with 4000 inhabitants, at the south end of the Wetter Lake. *Calmar*, a small episcopal city, on the west side of the Strait, formed by the island of Oeland, has a considerable maritime trade, and 5000 inhabitants. *Carlscrona*, on the south-east coast, is a strong town, built upon several islands, with a fine harbour, the ordinary station of the Swedish fleet; it contains docks dug in the rock, building slips, and formidable batteries, which render it almost impregnable towards the sea. Its citadel, upon an islet, is reckoned a masterpiece of military architecture; its granite walls are 20 feet high, and mounted with 200 pieces of cannon. — Population, 12,000. *Malmo*, a fine town, with considerable trade and manufactures, nearly opposite to Copenhagen.—Population, 8000. *Lund*, an episcopal city, with considerable trade, and the seat of one of the two universities of Sweden, 11 miles N.E. of Malmo. *Helsingborg*, a small town on the Sound, opposite Helsingor in Zealand, with a fine artificial harbour. *Christianstadt*, 54 miles E. of Helsingborg, is one of the best built towns in the kingdom, and is strongly fortified. It has a long bridge across the Helga river. *Vanas*, *Vanas*, or *Wanas*, 136 miles W.S.W. of Stockholm, upon an island or promontory on the west side of the Wetter Lake, at the entrance of the Gotha Canal, is a strong fortress, commenced in 1819; it was intended to be made impregnable, and to serve as a rallying point for the defence of the kingdom, in case of invasion by a foreign enemy. *Wisby*, on the west side of the island of Gottland, and the capital of the island, is the most remarkable place in the north of Europe. It is a city of the middle ages, existing almost unchanged to the present day, yet so fallen in importance, that though the space within its walls is capacious enough for 30,000 or 40,000 inhabitants, it yet contains only 4268, who are badly lodged in little tenements built under edifices of great cost and magnificence. During the tenth and eleventh centuries Wisby was one of the most commercial cities in Europe; and still contains the remains of 12 churches erected at that time. The harbour is not capable of containing more than a dozen of square-rigged vessels, and with only 9 feet of water, or 11, with particular winds *(Laing;)* but at *Slitohamn*, on the west side of the island, and *Capelshamn*, on the east, there are harbours with depth of water, it is said, for ships of war, or steam war-vessels.

3. *Norrland.* — *Hernosand*, an episcopal city, has a harbour, with considerable trade, a gymnasium or college, a botanic garden, and a printing-press, from which most of the works for the use of the Laplanders have been produced. — Population under 2000. *Lulea*, a small town, with a harbour and some trade, near the head of the Gulf of Bothnia. *Umea*, a thriving seaport town, with 1100 inhabitants, 170 miles N. of Stockholm. *Huddiksval*, a very neat little town with 2000 inhabitants, principally engaged in the stromming fishery, in the government of Gefle. The trade of ship-building has started up in all these little towns within a few years; the vessels are built entirely of fir, but are cheap, if not durable, and are purchased by Lubeck, Bremen, or Hamburg merchants. They are all increasing in extent and population.

NORWAY.

PEOPLE. — The Norwegians are a branch of the same family as the Danes, and speak a dialect of the same language. They are, however, generally a smaller race than the Swedes and Danes, but possess much spirit and fire in their manner.

They are lively, frank, undaunted, but not insolent. They are as much addicted to intoxication as the neighbouring nations; they all drink freely of corn or potatoe brandy, which is the indispensable beverage of both young and old. The total number of inhabitants, on 29th November 1835, was 1,194,827. In 1825 it was 1,051,318; the increase therefore during ten years was 13.6 per cent., or about $1\frac{1}{3}$ per cent. annually. The total population, in 1835, consisted of 585,381 males, and 609,446 females; the ratio of the two sexes being as 100 to 104. The rural population amounted to 1,065,825, of whom 523,922 were males, and 541,903 females, being in the proportion of 100 to 103. The population of the towns was 129,002, of whom 61,459 were males, and 67,543 females, their relative proportion being 100 to 109. In 1825 the rural population was 935,855, and the population of towns 115,463; the increase of the former, during ten years, was 14 per cent. and of the latter only 11 per cent. In 1840, the population of Norway amounted to 1,243,700.

RELIGION.—The Lutheran is the established religion, and to this the whole people conform. The clerical establishment consists of five bishops, those of Christiania, Christiansand, Bergen, Trondheim, and Norrland, or Alstahoug; 49 deans, and about 417 pastors of churches and chapels. The country is divided into 336 *prestgilds* or parishes, many of which are of large extent, and require four or five churches or chapels. The incomes of the bishops are reckoned about £850, and those of the rural clergy, from £170 to £340 each, derived from an assessment of grain in lieu of tythe, Easter and Christmas offerings, and dues for marriages, baptisms, and funerals. The patronage is vested in the five bishops and the Council of State, a committee of which has charge of all the affairs of the church. But, as in Sweden, religious feeling is rather at a low ebb; and in the wilder districts the church forms a sort of market-cross, where the people meet to transact their secular business.

EDUCATION. — Education is pretty generally diffused; but the standard of excellence is rather low, reading and writing constituting nearly the whole. There are parochial schoolmasters, of whom some have fixed residences, and others live for half the year in one place, and for the other half in another place. A small tax is levied from householders, and every adult pays a small personal fee. But the schools are too widely scattered to be generally beneficial. The higher department of university education, at Christiania, is very expensive; and, besides, there is not such a demand for educated men in the medical, legal, and commercial professions as in more densely peopled and more commercial countries; and the supply is adjusted to the demand. The restrictions on the free exercise of trade and industry also operate with great force in depressing general education. Before a person can enter upon any medical or legal employment, before he can manufacture, buy or sell as a merchant, he must obtain the privilege from a corporate body. As the expense of preparation, and the small number of prizes to be obtained, place the higher and the learned professions out of the reach of the great body of the people, as objects of rational ambition, for which they might endeavour to bestow a superior education on their children, so the restrictions and monopoly system shut them out from various paths and employments for which ingenuity, with ordinary useful education, might qualify them.—(*Laing's Norway.*)

GOVERNMENT. — The executive power is vested in the King of Sweden, and is exercised by a viceroy or governor-general, and a council of State; but the legislative power resides solely in the Stor-thing (*i. e.* Great Court) or Parliament, composed of members chosen by electors who are nominated for the purpose by the inhabitants of districts. The representatives must be at least thirty years of age, have resided ten years in the country, must possess property, or a liferent worth 150 dollars a-year, or belong to the class of government officers, which includes professors and clergy. Every man twenty-five years of age, and possessed of property worth 150 dollars, or holding the liferent of a property worth that sum, is entitled to vote in the choosing of the electors. Along with the sitting member a substitute is elected, who takes his place in case of death, sickness, or necessary absence. The ordinary meetings of the Stor-thing take place every third year, and nominally last three months, but may be prolonged by adjournments. The king has the power of calling extraordinary meetings, and the Stor-thing may adjourn from time to time, to resume consideration of any important matter which may not have been disposed of at the great meeting. The power of the Stor-thing is unlimited; no tax or law of any kind can be passed or imposed without its sanction; and though the royal assent is required before a law can be enforced, yet any bill which has been voted by three successive Stor-things becomes law without it. Appointments to public offices are nominally vested in the King, but are not final till confirmed by the

Stor-thing. The King neither presides nor is represented at its meetings; there is not even a crown-officer to propose bills, or give any explanation of ministerial measures; but, when any proposition is to be made by Government, a royal councillor is admitted, who reads the project, and then withdraws. At its meetings the Stor-thing divides itself into two chambers. One-fourth of its whole number is formed into a sort of committee, called the *lag-thing*, while the remainder form the *odels-thing*. The Stor-thing consists in fact of three houses, — the lag-thing, the odels-thing, and both of these united in one house. All motions are made and discussed in the whole house; and, if entertained, are referred to committees, to report. The report is debated and voted upon; and, if approved, a bill in terms of it is ordered to be brought into the odels-thing, from which it passes to the lag-thing, to be there deliberated upon, rejected, or amended. The members are paid for their services. Hereditary nobility was abolished by the Stor-thing in 1821 against the King's will.

Norway was under the absolute government of the King of Denmark, from an early period till 1814, when the Danish monarch, being compelled to cede this portion of his dominions to Sweden, issued a proclamation releasing his Norwegian subjects from their allegiance. Upon this the Norwegians declared themselves independent, formed a constitution which was proclaimed on the 17th of May 1814, and called the Prince Christian of Denmark to the throne: but the Crown Prince of Sweden having advanced into Norway with an army, the new King resigned his crown in October following, and the Stor-thing entered into an arrangement with Bernadotte, to confer the crown upon him, on condition of his maintaining the constitution which they had established. He accepted the terms on the 4th of November, and took the oath of fidelity to the constitution; but he, nevertheless, professes to consider his title to the kingdom as derived from the King of Denmark's cession, and the new constitution to be a grant from himself on the 4th of November; while, on the contrary, the Norwegians maintain, that their constitution exists as established by themselves on the 17th of May, and that the King's title to their crown is derived from the compact of the 4th of November. In this paltry spirit the King has kept up a dispute with the Norwegians for many years; the latter persisting in celebrating the 17th of May as the anniversary of the constitution, while the former interferes by every means in his power to prevent them. The constitution has proved in practice much too democratical for the lovers of monarchical government, and the history of the Stor-thing, for several years, has been a series of disputes with the executive government; of the earnest and repeated attempts of the one party to grasp a greater authority than they now possess, and of the other in steadily and resolutely resisting them. There is little indeed in the history of Europe, for the last twenty years, more interesting and encouraging than the history of Norway from the establishment of her democratical constitution.

For legal purposes, the kingdom is divided into four *stifts* or provinces, which are subdivided into sixty-four districts. For each of these divisions there is a separate tribunal, with a supreme court of appeal at Christiania, named the Hoieste-ret-court, which is one of the three estates of the constitution, being independent of both the executive and the legislative branches. This court consists of seven judges.

Revenues. — The revenue is in so flourishing a condition that the government has paid off the whole of that portion of the public debt of Denmark which was laid upon Norway, at the separation of the two countries, in 1814; while, on the contrary, the Danish portion has gone on continually increasing. The Norwegian revenue has increased with its population and industry. From 1816 to 1825, the average sum produced by the customs was about £215,000 sterling. In the ten following years, notwithstanding a reduction in the rate of duties, the average receipts were about £277,850; and in 1835, the receipts were about £350,332. The expense for the public debt, the army and navy, the administration, public instruction, &c. did not exceed, during these last ten years, £450,416 per annum; and as the customs sufficed for two-thirds of this expenditure, the direct taxes were consequently very light.

Army and Navy. — The Norwegian army consists of about 12,000 troops of all arms, besides 30,000 enrolled militia. The army is at the disposal of the King in so far as its services can be rendered available in Scandinavia; it cannot, however, be sent abroad without leave of the Stor-thing. The military navy consisted, in 1839, of 1 frigate, 1 sloop, 2 brigs, 8 schooners, 88 gun-boats and galleys.

Productive Industry. — 1. *Agriculture.* There are two classes of landholders in Norway; those who have farms larger than themselves can cultivate, and those who

farm the whole of their own estates. The former are termed proprietors; their incomes seldom exceed 800 or 900 dollars; but there are a few with incomes of £3000 or £4000 sterling a-year. The latter class are called *bonder*. The valleys are crowded with bonder farms, which, in apparent plenty and completeness, may compete with with the richest and finest in Scotland. The farmers are owners of their small estates, which produce all the necessaries of life, and afford a surplus for the payment of taxes, and the purchase of luxuries. There is still a third class, called the *Fjelde bonder*, who also possess land, and have houses; but, being above the level of the corn-growing country, their condition is not so comfortable as that of the low country bonder. They possess, however, property in cattle as well as in land, and are extremely hardy and active. The principal agricultural produce consists of oats, rye, wheat, bear, hops, flax, a kind of bearded spring grain, and potatoes; but the country is incapable of furnishing the means of subsistence to any considerable population; and though agriculture is not neglected, the produce of the crops is not sufficient for home consumption. Generally speaking, only the valleys are inhabited; on the dividing ridges there is little or no cultivation, and indeed no soil to cultivate, but only rounded masses of gneiss, and micaceous rocks, with juniper, fir, aspen, birch, and beech trees which grow wherever there is soil to support them.

2. *Fisheries.* — In Nordland and Finmark agriculture is but a secondary concern, and fishing may be said to occupy chiefly the attention of the inhabitants. The winter fishery in the Lofoden islands, from the middle of February to the middle of April, and the summer fishery along the coasts furnish the people with the means of purchasing the necessaries which they require. The fish trade is the subject of a very curious monopoly. It does not belong to Norway as a whole, but is in the possession of Bergen, Trondheim, Christiansand, and one or two other places of smaller note. Those who manage the business are licensed burgesses of these towns, and each possesses a certain extent of coast, or circle of country, within which no other person is entitled to buy or sell. These privileged traders pay a certain amount of tax, and are obliged to receive and entertain travellers; and their exclusive privilege has become hereditary, attached to the house or factory in which it may be exercised by a licensed trader. The average value of the winter fishery is about £86,500 sterling; the merchants send vessels furnished with the articles required in the country, and receive in payment the produce of the eight weeks' fishery. During the remaining ten months of the year, the trade of these northern provinces is left entirely in the hands of the Russians, who feed the population, and receive in return all that their industry produces in the fishery. The herring-fishery is so judiciously managed, that the Norwegians have beaten the Scottish curers out of the markets of the Baltic, as they deliver fish better assorted and of superior quality. Besides these important general fisheries, there is in every creek of the fiords, even at a hundred miles up from the ocean, abundance of cod, whiting, haddocks, flounders, seabream, and herring, caught for daily use, and for sale by the seafaring peasantry. On the rocky shores of Christiansand lobsters are found in greater numbers than in any other part of the world; and from Bergen so many as 260,000 pairs have been exported in a year. The rivers and lakes are likewise well supplied with fish, which may indeed be said to constitute the basis of a Norwegian repast.

3. *Mines.* — The mountains, especially those of the south, contain a great number of minerals sought after for collections, and of valuable metals, among which may be mentioned gold, silver, iron, copper, cobalt, and others. The principal silver mine is at Kongsberg, the annual profits of which are stated to be £22,000 sterling. *(Bremner.)* There is a gold mine at Edswold, in the district of Rommarge, and mines of lead and silver in that of Jarlsberg; but they have not been wrought to any extent. The copper mines are chiefly situate in the northern part of the kingdom. The most considerable are those of Roraas, which were discovered, in 1644, at the base of the Dovre-field. The other copper mines are from 45 to 60 miles from Trondheim. The principal iron mines are in Southern Norway, at Arendal, Krageroe, Laurvig, Moss, and other places; the whole produce of which has been estimated at 14,735 tons annually. The mines of cobalt, worked at Modum and Fossum, are extensive, but not deep. There is a mine of plumbago at Engledal. The alum mines, wrought in the Egeberg, near Christiania, afford a sufficient supply both for home consumption and for exportation. There are also in different places quarries of granite, marble, millstone, whetstone, slate, and clay.

4. *Manufactures.* —The great bulk of the population are employed in farming, preparing timber for the market, fishing, or navigation. A few men are employed in the

mines; but of manufacturers on a great scale, there are none in the country. In the rural districts every family manufactures its own cloth and linen, and furnishes its own sempstress, tanner, shoemaker, and blacksmith. Every person can work in wood; domestic implements, and ornaments and furniture are all made by the peasants themselves.

5. *Commerce.* — Wood and fish are almost the only exportable produce of the country, and find their way to every part of Europe, chiefly in Norwegian vessels, which, in return, bring home whatever foreign articles are required, at the cheapest rate of freight. The principal articles of export are timber, bark, iron, copper, and fish; of import, corn, colonial produce, woollen, linen, and cotton goods, wine, brandy, &c. The inland trade between Norway and Sweden is also considerable. The principal commercial towns are Bergen, Drammen, Christiania, Langesund, Christiansand, Trondheim, Frederikstadt, Arendal, Oster-Rusoer, Laurvig, Tonsberg, and Hammerfest. The national bank is established at Trondheim: its notes form the principal part of the money currency in the country; and even on the Exchange of Hamburg, are valued so high as at the rate of 111 dollars paper for 100 specie.

Inland Communication. — The roads which connect the principal towns are good, and travelling along them is accomplished in the same way as in Sweden, by the peasants being obliged to send their horses to the post-stations in rotation. The country contains no railroads or canals.

Administrative Divisions. — Norway is divided into 17 *amts* or districts, which may be arranged according to the three geographical regions within which they are situate, viz. *Sondenfjelds*, *Nordenfjelds* and *Nordlandens*, as stated in the following table: —

Districts.	*Cities and Towns.*
Sondenfjelds.	
Aggerhuus,	Christiania, Drobak.
Smaalehnene,	Moss, Frederikshald, Frederikstad.
Hedemarken,	Hof, Kongsvinger, Elverum.
Christian,	Biri, Lessoe.
Buskered,	Drammen, Eger, Modum, Kongsberg.
Bratsberg,	Skien, Porsgrund, Krageroe, Langesund, Brevig.
Nedenaes and Raabygdelaget,	Arendal, Grimstad, Rüsoer.
Lister and Mandal,	Christiansand, Mandal, Farsund, Flekkefjord.
Stavanger,	Stavanger, Egersund.
Jarlsberg and Laurvig,	Tonsberg, Holmstrand, Laurvig, Sandefjord, Frederiksvörn, Valloe.
Nordenfjelds.	
Söndre-Bergenhuus,	Bergen, Rosendal.
Nordre-Bergenhuus,	Leganger, Viig, Indvig.
Romsdal,	Christiansund, Molde.
Söndre-Trondheim,	Trondheim (Drontheim), Roraas.
Nordre-Trondheim,	Levanger, Stordalen, Skogn.
Nordlandens.	
Nordland,	Bodoe, Alstahang or Alstahong.
Finmark,	Tromsoe, Altengaard, Hammerfest, Wardoehuus or Vardoe, Vadsoe.

§ *Cities and Towns.*

Christiania, the capital, stands at the head of a long fiord, on a low slope surrounded with beautiful heights, in north latitude 59° 55′, and east longitude 10° 48′. It is a dull town of plain houses, and without any other ornamental buildings than the royal palace, recently erected at the cost of £300,000, but still unfinished and unoccupied. The quarter, however, inhabited by the higher classes is laid out regularly with spacious and even handsome streets. The houses are of brick. Christiania is the seat of the government departments, of the higher courts of law, of the university, and other seminaries of high character; the principal of which is the military academy or cadet institution, which possesses an excellent library, a collection of models of mines, bridges, &c., and of all sorts of minerals. It contains 40 pupils, divided into four classes, who enter the army after having studied for five years, and passed a very rigid examination. Christiania possesses a considerable foreign trade, and contains a greater proportion of the educated and refined classes, and of people of literary tastes, than any town in Britain of equal extent.—Population, 24,000. *Frederikshald*, 60 miles S.S.E. of Christiania, is a town of 5000 inhabitants, spreading irregularly round the foot of a lofty rock, on the top of which is the fortress of *Frederikstein*, 400 feet above the level of the sea, and still very strong. A small obelisk marks the spot where Charles XII. was killed in 1718. *Drammen*, 24 miles S.W. by W. of Christiania, a large straggling town, with 7250 inhabitants, exports more timber than any other town in Norway. *Kongsberg*, 20 miles W. by S. of Drammen, a very poor though substantially built town with 3000 inhabitants. About 3½ miles from the town, in a sequestered part of the mountains, is the celebrated silver mine. It consists first of a horizontal tunnel into the side of a hill 5850 feet long, the shaft then descends perpendicularly 1350 feet, to a point 3850 feet below the summit of the superincumbent mountain. The silver is found in a slender vein which the miners hunt and follow with the shaft wherever it wanders, and the mine is so narrow that only two can work at once. The mine is public property, and the profits are stated to be about £22,000 sterling.—*(Bremner.)* Three miles below Kongsberg, the Louven-elf forms a series of tremendous falls, called the *Laabron-fos*; and 40 miles W. by N. of Kongsberg, the Maan river has a fall of 450 feet, called the *Rinkan-fos*. *Modum*, 27 miles W. of Christiania, is noted for its rich mine of cobalt. *Arendal*, *Laurvig*, *Rüsoer*, *Grimstad*, and *Tonsberg*, are all seaport towns on the coast S.W. of the capital, and possess a number of vessels, which carry on a considerable trade. *Frederiksvörn*, the naval arsenal

of Norway, is a strongly fortified town, 68 miles S.S.W. of Christiania. *Christiansand*, 37 miles E.N.E. of the Naze, is a considerable trading town, with a fine fortified harbour, and a quarantine station. It has also a college, a library, a museum; the population in 1835 amounted to 7765. *Mandal*, a small seaport town midway between Christiansand and the Naze, at the mouth of the Mandal river. *Stavanger*, on the North Sea, lat 59° N., is noted for its fine harbour, its antiquity, and its cathedral, considered to be the finest Gothic monument in Norway.—Population in 1835, 4857. *Frederikstad*, a fortified town, with a good harbour and considerable trade, and believed to be the only town in Norway built of stone; 50 miles S. by E. of Christiania. — Population in 1835, 2405.

Bergen is situated at the head of a deep bay on the west coast, 365 miles W.N.W. of Christiania. The town is well-built, and, when viewed from the sea, has a very picturesque appearance. It contains a cathedral and four other churches, three hospitals, a prison, a correction-house, six establishments for the poor, a national museum, five public libraries, a naval academy, a college, and various schools. It has manufactures of tobacco and porcelain, many distilleries, and some ropeyards; but the fishery is the principal business. The town is surrounded by lofty walls, and protected by several forts, a garrison of 300 men, and a squadron of the navy. The harbour is safe and commodious, with deep water; but, owing to rocks, is of difficult access. — Population in 1835, 22,839.

Trondheim (Trondyem, Drontheim), formerly the residence of the Norwegian kings, is situate on the shore of a vast fiord, in N. lat. 63° 25′. The town is built wholly of wood, and has been seven times burnt to the ground; but the houses are handsome, and tastefully ornamented. It contains a cathedral, built in room of an older one burnt in 1719, which had been for centuries a noted place of pilgrimage. It contains also a college, a royal academy of sciences, a cabinet of natural history, a good public library, a seminary for the instruction of the Laps, and several other institutions. It is the entrepot of the copper produced by the rich mines of Roraas. — Population in 1835, 12,358. The environs are very beautiful. *Roraas*, a town in the district of Trondheim, with about 3000 inhabitants.

Christiansund, in the district of Romsdal, a small town, with a fine harbour, flourishing fisheries, and an agricultural society. — Population, 2000. *Alstahoug*, a miserable town, is only remarkable as the most northerly bishop's see in Europe (lat. 67° 38′), and as the residence of the bailie of Nordland. *Tromsoe*, capital of Finmark, a small town on an island, with considerable trade, and about 700 inhabitants. There is a newspaper published here, probably the most northerly in the world. *Hammerfest*, a small town in Finmark, upon the island Hvaloe, has only about 100 inhabitants, but carries on a considerable trade. In the five years ending with 1834, the value of its exports, consisting of fish, skins and hides, feathers, horns, walrus teeth, wool, train oil, and copper ore, was about £160,780 sterling. But within the custom-house bounds of Hammerfest, there are upwards of thirty privileged establishments, over which the officers have no control, and with which the Russians have the privilege of trading one month in each year. *Wardoehuus*, a small fortress, with a harbour, and about 100 inhabitants, in N. lat. 70° 22′. Every soldier who serves here for four years voluntarily, is exempt from military duties for the remainder of his life.

RUSSIA IN EUROPE.

Astronomical Position.—Between 43° and 70° North latitude, and 18° and 65° East longitude.

Dimensions. — The greatest extent, measured from the most southerly point of the Crimea to the north coast of Lapland, or the mouth of the White Sea, is 1720 miles; and from the western border of Poland to the 60th meridian, along the 52° parallel, 1791 miles. The superficial area exceeds 1,800,000 English square miles.

Boundaries.—*Northern :*—The Arctic Ocean. *Southern :*—Caspian Sea, Kouma and Kouban Rivers, Black Sea, Danube. *Eastern :* — Ural mountains, Ural River, Caspian Sea. *Western :* — Norway, Sweden, Gulf of Bothnia, Baltic Sea, Prussia, Austria, Moldavia.

General Aspect. —With the exception of Finland, Lapland, and the country to the north-west of the Gulf of Finland, the great lakes and the White Sea, the whole of this extensive territory belongs to the great plain, which extends through the middle of Europe, from the German Ocean to the Caspian Sea and the Ural mountains. It is not, however, perfectly level; for there are at least three distinct slopes down which its waters are carried to the adjoining seas. The water-shed, which is only a few hundred feet in elevation, may be traced from a spur of the Carpathians, near the source of the Dneister, through the provinces of Volhynia, Grodno, Minsk, Smolensk, Bialistock, Pskov, Tver, Novgorod (where it forms a sort of plateau, and rises into the Valdai hills, the highest point of which is only 1370 feet above the level of the Baltic Sea) and Vologda, to the Ural mountains, at the sources of the Petchora. The northern slope, which forms the basin of the White Sea, possesses a barren soil and a cold climate; its southern districts are chiefly covered with forests, only a few spots being cultivated; and towards the north it stretches out into immense plains covered with moss, marshy in summer, and frozen in winter, and interrupted here and there with a few rocky ridges. The southern slope may be divided into three regions: — Central Russia, the Steppes, and the country beyond the Volga. Central Russia and Poland, which extend from the Carpathian mountains and the western border of Poland to the banks of the Volga, with a breadth of about eleven degrees of latitude, to the south of the great water-shed, improves progressively towards the south; the southern half being a country of great fertility. Between this fertile region and the Caspian and the Black Seas extend the *Steppes*, which are usually divided by geographers into the *Higher* and the *Lower*. The former extend westward from the Don and the Manytsh, along the Sea of Azov and the Black Sea, including three-fourths of the Crimea, cross the Dnieper, and spread westward along its right bank till they meet the outskirts of the fertile regions of Little Russia. Their surface is in general not more than 200 feet above the level of the sea; and throughout the whole space there is nothing to be seen but a coarse rank grass, which feeds immense droves of horses, but is unsuitable for cattle. In the hollows, however, along the banks of the rivers, and in some other places, where care is bestowed on its cultivation, the soil is sufficiently productive; and in the Crimea, wherever vegetation is capable of being produced, the whole surface of the Steppe is covered with plants, whose gaudy blossoms fill the air with refreshing fragrance. The Lower Steppes extend along the northern and western shores of the Caspian Sea, from the river Ural to the bottom of the Caucasus, with a breadth of from 250 to 300 miles. The soil in the maritime parts is covered with a fine sand mixed with shells, and produces no trees or shrubs, but only at certain seasons a scanty grass. The soil is everywhere strongly impregnated with salt, and the lakes which occur in it yield a quantity of that article in summer sufficient to supply the greater part of Russia. The country to the east of the Volga is hilly, and even mountainous, being traversed by the spurs of the Urals. It is of moderate fertility in the valleys; but the hills and the lower parts of the mountains are covered with forests. The third slope, which declines to the Baltic, extends from the borders of Prussia to the Gulf of Finland, and the Lakes of Ladoga and Onega, and is in general a country of moderate fertility, interspersed with a number of lakes, and containing some sandy tracts, intermixed with portions of rich soil. The country

to the north-west of the great lakes, the White Sea, and the Gulf of Finland, including Finland and Lappmark, is, in the northern and western parts, covered with mountains, the main range of which extends southwards, parallel with the Gulf of Bothnia, till it gradually disappears in the neighbourhood of Biorneberg. The centre of Finland is an elevated plateau, from 400 to 600 feet above the level of the sea, full of lakes, and covered with low rocky heights, composed chiefly of red granite. Lappmark is exceedingly barren; but the valleys among the mountains, in the southern parts of Finland, contain rich meadows and good arable land. Both the western and the southern coasts of Finland are lined with precipices, reefs, and rocky islands; and in some parts of the lowlands the surface is overspread with enormous blocks of granite.

GULFS, BAYS, AND STRAITS. — The *Bieloe Moré*, or *White Sea*, is a large gulf of the Arctic Ocean, about 200 miles in length, but varying in breadth, the narrowest part being 45 miles across. It occupies an area of 40,000 square miles, and is mostly covered with ice during four or five months of the year. Its north-western portion is named the *Gulf of Kandalax;* and on its south-west side are the *Bays* of *Onega* and *Arkhangel*. The *Tcheskaia Gulf* is another inlet of the Arctic Ocean, separated from the White Sea by the Shemo Rhonskian peninsula. The *Strait of Waigatch*, still further east, is formed by the mainland of Arkhangel, and the island of Waigatz. The *Gulfs* of *Finland*, *Bothnia*, and *Riga*, are large inlets of the Baltic Sea, and form together nearly the whole of the western maritime border of Russia. The *Black Sea*, (*Tcheriago Moré* or *Cherno Moré*), *Sea of Azov*, *Kimmerian Bosphorus* or *Strait of Yenikaleh*, or *Kaffa*, all in Southern Russia. The Sea of Azov (Azow) is an arm or branch of the Black Sea, with which it communicates by the Strait of Yenikaleh. Its greatest length from S.W. to N.E. is about 210 miles, and its greatest breadth about 110. It is generally shallow and encumbered with sand-banks; its greatest depth is only about 7 fathoms. The north-eastern portion is so shallow, even where deepest, that it cannot be navigated by vessels drawing more than 12 feet water; and during the prevalence of easterly winds the bottom is uncovered to a considerable extent. Its water is little more than brackish; it abounds with fish; and the fisheries are important and valuable. The trade mostly centres at Taganrog; but the sea is generally frozen over from November till February or March. Along the western shore it is marshy, and is there separated by a narrow tongue of sand 70 miles in length, from a stagnant gulf named the *Putrid Sea* (*Sivaché Moré* and *Guiloe Moré*), which nearly divides the peninsula of Crimea from the mainland of Taurida.

CAPES.— *Sviatoi Noss*, at the eastern side of the Tcheskaia Gulf; *Kanin Noss* at the eastern side, and *Sviatoi Noss*, at the western side of the entrance of the White Sea. *Domesness*, at the south-western entrance of the Gulf of Riga. It has a double lighthouse, but is nevertheless dangerous to shipping. *Aia Burun*, called also *Kriou Metopon*, or the *Ram's Head*, is the most southerly point of the Crimea in the Black Sea; and consists of very high cliffs.

ISLANDS.—1. In the Arctic Ocean:—*Novaia Zemlia*, or the *Newland*, consists of at least two large islands, which extend from the Strait of Kara towards the north-north-east, for about 400 miles, with a breadth of only 50. They are divided near the middle by a strait named the Matotschkin Skar, and consist of an exceedingly sterile region, traversed through their whole length by a range of mountains. The eastern coast of the northern island is so completely obstructed with ice, that no navigator has yet been able to explore it; the climate is too rigorous to admit of the country being inhabited; and the only vegetation consists of lichens and mosses. *Waigatz*, a small island between Novaia Zemlia and the continent. *Kolgouev*, another small island to the north of the Tcheskaia Gulf, covered with marshes, moss, and brushwood. *Solovetskoi* (*Nightingale*) *Islands*, a granitic group in the southern part of the White Sea.

2. In the Baltic Sea:—*Oesel*, *Dago*, *Wormo*, *Moen*, *Runa*, and others, separate the Gulf of Riga from the Baltic. *Oesel*, called by the Esthonians *Kurrisaar* (Crane Island), is about 50 miles in length, by 30 in breadth; its surface is diversified by forests, lakes, and rivulets; the inhabitants are industrious though rude, and *Arensburg*, its capital, contains a population of 1400. *Dago*, lies to the north of Oesel, and abounds in wood; the western part is sandy, but not unfertile; rich meadows, orchards, and gardens occupy the eastern part. The other smaller islands of the group have nearly the same character. The Esthonians give to them the general name of *Sarri-ma*, or the island country. Their climate is milder than that of the continent; the autumns are more genial, the oak thrives, and the sheep have a finer wool. *Aland* is the name of a large group of rocky islands at the entrance of the Gulf of Bothnia. So many as 80 of them are said to be inhabited, and the largest contains a population of 14,000. The Russian government has been engaged for many years in fortifying these islands, so as to make them an impregnable naval station; and constantly maintain upon them a very large garrison. The sea between the Aland islands and the coasts of Sweden and Finland, is frequently passable upon the ice in winter; but, generally speaking, the climate is not cold, and good crops of barley are produced. The inhabitants are largely engaged in the fisheries, and export great quantities of fish, and of the eggs and feathers of the sea-fowl, which breed among the islands. *Rotline*, an island of sand, near the eastern extremity of the Gulf of Finland, containing the fortress, naval arsenal, and port of Cronstadt.—(*See Cities and Towns.*)

3. In the Black Sea:—*Taman*, between the Sea of Azov and the Black Sea, formed by the two branches of the river Kouban, on the eastern side of the Strait of Yenikaleh. *Zmievoi*, called by the Turks *Oulan-Adassi*, or *Serpent's Isle*, 24 miles off the mouth of the Danube, is about a mile and a half long, and principally composed of barren cliffs, with little or no vegetation, which form a secure retreat for vast numbers of sea-birds. The Greeks, Russians, and Turks believe it to be infested with serpents of enormous size, which keep guard over boundless treasures, and devour every human being who has the rashness to land upon it. The ancient Greeks called it *Leuké* (*i. e.* White Island), and believed it to be the abode of the hero Achilles, in his deified state.

RIVERS. — 1. THOSE WHICH FLOW TO THE ARCTIC OCEAN.

The *Paswig*, which is the outlet of Lake Enara, and forms in part the boundary between Russian Lapland and Norway. The *Kola*, also in Lapland. The *Petchora*, a large river, which has its source in the Ural mountains in the Government of Perm, and flows through a desolate region into a gulf of the Arctic Ocean. The *Onega*, the *Dvina*, and the *Mezen*, flow into the White Sea. The Dvina is a large and important river, and forms at its mouth the harbour of Arkbangel. It is formed by the union of the *Soukhona* and the *Iog;* and its principal affluents are the *Vitchegda* and *Keltma*, and the *Pinega*, on the right; the *Baga* on the left.

2. THOSE WHICH FLOW TO THE BALTIC SEA.

The *Tornea* and *Muonio*, which form the boundary between Russia and Sweden, at the head of the Gulf of Bothnia. The *Kemi*, *Ulea*, *Pyhajoki*, and *Kumo*, flow into the eastern side of the same gulf.

The *Kymen* or *Kunmene*, flows into the Gulf of Finland. The *Neva*, a large river, forms the outlet of Lake Ladoga, and enters the Gulf of Finland at St. Petersburg. Its length from the lake to the sea is 46 miles, its mean breadth about 1500 feet, and its depth, in many places considerable; in the channel it is generally about fifty feet. It is frozen over for five months in the year. The principal feeders of the lake are the *Swir*, which is the outlet of Lake Onega, the *Volkhov*, which is the outlet of the Lake Ilmen, and the *Woxa* or *Wuoxa*, which is the outlet of the Lake *Saima;* so that the *Neva* is the only outlet of all these great masses of water. The *Narva* or *Narova*, flows from Lake Peipous into the Gulf of Finland, below the town of Narva. The *Duna* (*Drugowa* of the Lettons, and *Southern Dvina* of some geographers) rises from a marsh in the Government of Tver, not far from the source of the Volga, and flows into the Gulf of Livonia below Riga. It is navigable up to Velige, in the eastern part of the Government of Vitepsk; its principal affluents are, the *Drissa* and the *Pedetz* on the right; the *Meia*, *Ula*, and *Disna*, on the left. The *Niemen* rises in the Government of Minsk, and flows into the Curische Haf, below Memel. Its principal Russian affluent is the *Wilia*, which passes Wilna. The *Vistula* flows through Russian Poland, where it receives the waters of the *Wieprz*, *Bug*, and *Narew*, on the left; the *Pilica*, and *Bzura*, on the right.

3. THOSE WHICH FLOW TO THE BLACK SEA.

The DON or TANAI (ancient *Tanais*) has its source in the small lake Ivanof, in the Government of Tula, and flows into the Sea of Azov, after a course of 900 miles. It is generally so sluggish and full of shallows that it is nowhere navigable for large vessels. Its bed, however, contains neither rocks nor large stones, but is formed of sand, marl, and chalk. From the middle of April to the end of June, small vessels ascend to Zadonsk; but at other times there are not more than two feet of water on the sandbanks, and its mouths are so completely choked with sand and mud, that only flat boats can be used upon it. Above Voronej its course lies among fertile hills; from that place, till it pass the chain of the Volga, its left bank is so flat that the adjoining country is often formed into unhealthy swamps, but its right bank is lofty. Its waters are so strongly impregnated with chalk and mud, as to be dangerous to those unaccustomed to drink them, but they nevertheless abound with all the kinds of fish usually found in the Russian rivers. Sandbanks and small islands are of frequent occurrence, but there is not a whirlpool, nor a waterfall in its whole course. Its principal affluents are the *Sosna* and *Donez* or *Donetz*, on the right; the *Voroneje*, *Khoper*, *Medviaditsa*, and *Manytsh*, on the left.

The DNIEPER rises from marshes among the Alaunian hills, in the Government of Smolensk, and after a course of 1000 miles, discharges itself into a gulf of the Black Sea, 50 miles in length, and from 1 to 5 or 6 miles in width. It is navigable from Smolensk to Kief, where it is crossed by a bridge 3583 feet, or 1638 paces long; but, further down, its bed is so full of rocks and cataracts, that from Krementchug to Alexandrofsky, a distance of 150 miles, there is no navigation. At the latter place it becomes again navigable, and so continues to the sea. It abounds with sturgeon, shad, pike, and carp. In the upper part of its course it is frozen from November to April, and at Kief, from December to March. Its principal affluents are, the *Berezina*, *Priepecz*, the *Teterov*, and the *Bog* or *Bûg*, on the right; the *Desna*, *Seim*, *Sula*, *Psol*, *Worskla*, *Uriel*, on the left. The Priepecz flows through the middle of an extensive swamp, which covers an area of upwards of 2000 square miles, and is connected with an immense swampy tract, which extends northwards between the sources of the Niemen, the Berezina, and the Vilia, and terminates at the Duna, to the southward of Dunaburg and Polotsk. The Bûg is a rapid river with a deep bed, abounds in fish, and flows into the gulf of the Dnieper, and not into the river itself.

The DNIESTER issues from a small lake on the north-eastern flank of the Carpathian mountains, in Galicia, and flows in a south-easterly direction into the Black Sea at Akerman. It is navigable, and forms a good outlet for the raw produce of the country on its banks.

The PRÛTH also rises on the north-eastern flank of the Carpathians, and flows southward into the Danube, below Galacz, after having formed, throughout the greater part of its course, the boundary between Moldavia and Bessarabia.

The KOUBAN rises from the northern side of the Caucasus, in the country of the Circassians, and, near its mouth, divides into two branches, one of which flows into the sea of Azov, and the other into the Black Sea.

4. THOSE WHICH FLOW TO THE CASPIAN SEA.

The WOLGA (VOLGA), the largest river in Europe, has its source in a small lake, in the forest of Volkhonsky, in the government of Tver, about 560 feet above the level of the Caspian Sea. At Rief, where it first becomes navigable, it is only 90 feet wide; thence it flows constantly to the east, though with considerable windings, to Kasan, where its width is 600 feet. From Kasan, not far below which it receives the *Kama*, a large river from the north-east, it flows in a south-westerly direction till it approaches within forty miles of the Don, from which it is separated by a lofty but barren tongue of land; and at Sarepta it turns to the south-east, and continues in that direction to the Caspian Sea, which it enters by 65 or 70 mouths. The length of its course is about 2220 miles. It flows in many places among beautiful hills, but contains no falls. It has always a considerable depth, which varies from seven to eighteen feet, and in some places attains a great width. At Nishnei-Novgorod, where it is joined by the Oka, it is 4600 feet wide; but farther down, the steep banks confine it to the breadth of two-thirds of a mile. At Kasan, however, it is only 600 feet wide, and at Saratov, 1200; but at Astrakhan, when in flood, its width is nearly five leagues, and when the snow is melting, its vast stream flows among a multitude of islands linked together by forests. The Wolga is the great highway of Central Russia; about 5000 loaded boats annually descend the stream; it is said to supply more than half of the fish consumed in the empire; and the fisheries have been calculated to yield a clear annual profit of £220,000 sterling. During a great part of the winter the river is frozen over; but in the south, there are always many openings, named the Lungs of the Wolga, through which the air escapes. Its name is said to mean *Great;* its Tartar name, *Idel*, *Edil*, or *Adel*, signifies abundance; the ancient Greeks called it *Rha*, and sometimes *Araxes;* and the Merdouins, at the present day, call it *Rhaou*. Its principal affluents on the right are:—the *Oka*, with its affluents *Upa*, *Zna*, *Moskva*, and *Kliasma;* and the *Sura*, with its affluent the *Alatyr*. Its affluents on the left are:—the *Tvertza;* the *Mologa;*, the *Checksna*, the outlet of the Bicle-Ozero; the *Kama*, with its affluents the *Viatka*, *Sikra*, *Bielaia*, and *Ufa;* the *Samara*, and the *Sarpa*.

The *Ural* or *Iaik* river rises from the eastern flank of the Ural mountains, and flows into the northern side of the Caspian Sea. It is a large river, flowing in a smooth channel, sufficiently deep for small vessels, abounds in fish, and throughout the greater part of its course, forms the reputed boundary between Europe and Asia.

LAKES.—Russia abounds with lakes, but our space will permit us only to name the principal ones. The *Ladoga*, the largest in Europe, and the *Onega*, the second (see p. 141), and the *Saima*, with many others, are situate between the Gulf of Finland and the White Sea. The Ladoga is bordered on the north by calcareous rocks, which contain quarries of fine marble; but in other places its banks are low and sandy. The bottom consists chiefly of gravel; the water is clear, and abounds with fish. It is covered annually with a thick crust of ice, and it is then that the fishermen are most successful. There are more inequalities on the banks of the Onega, but in other respects its character is the same. The streams of its feeders fall in cataracts, or wind slowly through heaths and

barren lands. The other principal lakes are the *Bieloe Ozero* (White Lake), and the *Ilmen*, in the government of Novgorod; the *Peipous* or *Tchoude* (see p. 141), between St. Petersburg and Livonia; *Kubinsk*, in Vologda; the *Bolchoi-ilmen*, formed by the Manytsh, an affluent of the Don; the *Enara*, in Lapland. These and other lakes are the recipients and feeders of large rivers, which originate in marshy uplands, where the waters derived from the melting snow accumulate into vast reservoirs. The government of Olonetz alone is said to contain about 2000 lakes; Finland is nearly as well supplied; and the government of Astrakhan abounds with salt lakes and marshes.

Climate. — The climate of Russia is of an extreme character; the winters being colder, and the summers warmer, than in the corresponding latitudes of western Europe. In the south, however, the spring is early and mild; the summer is of long duration, with oppressive heat and little rain; autumn follows late in the year, and the winter is short, with little snow, though sometimes the cold is severe. In the heat of summer, a dangerous disease, named *jassia*, is generated, which is fatal to the lower animals as well as to man. Violent whirlwinds are frequent; and a north-easterly wind prevails, called *mitel*, often accompanied by snow, which is drifted with great violence, and much dreaded. The middle region, extending from 50° to 57°, has a rough and long continued winter, especially towards the east; and at Moscow, Lat. 56°, the mean temperature of the year is only 40° of Fahrenheit, while that of the hottest month rises to 70½°. In the more northerly region, from 57° to 67°, the climate is much milder than in the same parallels in Asia, but is severer than in western Europe. The winter here is long and severe, extending to six or seven months, during which travelling is practicable only on sledges over the frozen snow. The autumn is foggy, and, in winter, mercury freezes. The duration of winter at St. Petersburg extends from the end of September to the beginning of May; snow and ice set in about the 9th of October, and continue till May, when winter disappears all at once. On an average, 230 days of the year are reckoned to belong to winter; and for 160 of these the waters are fast bound with ice. In the arctic region, extending from 67° to 74°, the climate is very rigorous in winter, and warm in summer, there being in fact little more variety than one long winter night and one long summer day. The summer, however, is much overcast with vapours, which obscure, and sometimes hide the sun; while, on the contrary, the long night is greatly relieved by clear moonlight and the brilliant corruscations of the aurora.

Geology and Mineral Productions. — The predominating formations are the tertiary and alluvial; the older formations being less unfrequent. The primitive, however, and the transition rocks, occur in the Urals, Finland, Lapland, in some parts of Carelia, Olonetz, Crimea, Caucasus, the Valdai plateau, Sandomir, Revel, the country round lake Ilmen, and Vologda, and the tract extending eastward from Brody across the Dnieper. The secondary rocks frequently appear rising like small islands, in the great plains; and among the formations of this class are found coal, lime, gypsum, chalk, and salt. The tertiary formations occupy vast tracts of the low country, and include clay, loam, limestone, brown coal, gypsum, and in many places rich deposits of rock salt. Throughout Poland, Podolia, and southern Russia, there is a tertiary limestone extensively deposited, which is almost peculiar to the country. It is covered with a marly clay and sand, and contains numerous fossil remains of unknown animals. In central Poland is a clay with lignite or brown coal, resting upon chalk. The alluvial formations consist of an old and a new deposit, the former composed of a great stratum of marly clay or loam, interspersed with numerous blocks of granite and other primitive rocks. It covers vast tracts of country in Poland. The soil which it forms in the south of Poland is excellent, but towards the north it becomes gradually less productive, and more mixed with sand, gravel, and large blocks. An alluvial sand, different from the sand of rivers, is widely distributed in Poland, and is connected with the great sandy plain of Northern Germany. Vast numbers of blocks of stone occur in this plain, which are believed to have been transported from Finland by some great flood. The great mineral riches of the empire are found in the Ural and the Altai mountains. In 1846, their value was stated at L.3,414,427. A tract, however, called the Central Mining District, extends from the Oka to near Kaluga, which is for the most part poor and sandy, but contains iron ore; and, as the metal is manufactured in the places where it is found, several extensive iron works have been erected in several quarters. At Petrozavodsk, on the west side of the lake of Onega, there are iron works, believed to be the largest in the north of Russia. Bog-iron-ore abounds in the neighbourhood, and for a long time was the only kind smelted, but other kinds are now wrought. Another great work of the same kind is situate three miles from St. Petersburg, on the Riga road. Finland yields copper and tin, but only one mine of the former is wrought. Coal is found in various places, in small quantities. One mine is wrought at Fula, and another at Bakhmout, in the govern-

ment of Iekaterinoslav. In Southern Poland are numerous beds of black bituminous coal, sometimes thirty feet thick, occurring in the secondary formations. In the tertiary districts deposits of brown coal are met with, which likewise yields amber. In the country to the north of the Caspian Sea are numerous lakes and marshes which produce great quantities of salt; and mines of that valuable article are also found in different parts of the country; a tract, called the Northern Salt District, stretches in a line parallel with the St. Petersburg limestone for 663 miles. The mineral first appears in the island of Oesel, and is worked at several places in Livonia. A central salt district is also described as existing in the course of the Volga; and along the Kama is a rich and extensive tract of marl, salt, and gypsum. The principal salt works are in the neighbourhood of Solikamsk; and the gypsum grottoes of Koungour, in the government of Perm, are large and magnificent. In Poland there are large mines of rock-salt, which form part of that enormous layer of fossil salt which extends along the Carpathian mountains, and is large enough to supply the whole world for an indefinite period. Copper-sand is found throughout a large extent of country in the governments of Perm, Viatka, and Ufa, completely skirting the south and west sides of the Urals. The sand is of a dull red or green colour, and is worked for copper; it contains also fossil wood impregnated with the metal. But it is in the Asiatic territory of Russia that the most abundant mines of copper are found, as well as those of gold, silver, platina, and other metals.

The geologist who has been accustomed to the diversified features which invariably characterize all the other countries of Europe in which the older sedimentary rocks exist, and has often had the utmost difficulty in ascertaining their succession and classification, in consequence of the great disturbances and alterations to which deposits of this age have been subjected; who has seen their frequent breaks, and sometimes even their entire reversal in limited areas, is delighted to find in so wide a portion of the earth's surface as Northern Russia those strata spread in horizontal unbroken sheets; each great formation trending for distances of a thousand miles, with few or no changes in its mineral characters or organic remains. The formations succeed each other in the following ascending order:—1. Silurian Rocks; 2. Old Red or Devonian System; 3. Carboniferous System; 4. Oolite Series; 5. Cretaceous System; 6. Ferruginous Sands; 7. Chalk; 8. Tertiary Deposits; 9. Younger Pliocene; 10. Drift and Erratic Blocks.

1. *Silurian Rocks.* — The oldest stratified deposits of Russia are clays, sandstone, limestone, &c. which, from the organic remains they contain, are clearly the equivalents of the Silurian system of the British isles. These Silurian deposits occupy Oeland, Gothland, and other islands in the Baltic; also the shores of Courland, whence they trend in a bread bank from W.N.W. to E.N.E. till they are lost under vast heaps of granite detritus between the Lakes of Ladoga and Onega. At the northern end of the latter they are deflected to the north, and there meet with great ridges of trap rocks, which run from N.N.E. to S.S.W. In that region all the deposits are in a highly altered state, and the limestones present few distinct traces of fossils; but, from the nature of the country, no descending order between these rocks and the great primary granitic chain of Scandinavia and Lapland can be observed.

2. *Old Red*, or *Devonian System.*—This system is of enormous extent, ranging from the borders of Poland through Lithuania by the Lake Ilmen and the Valdai hills to the W.N.W., where it constitutes much of the shores of the White Sea. It consists of flag-stones, clays, marls, cornstone, and sandstones; the whole bearing a striking resemblance to the British deposits of the same age, from which however they differ, in containing copious salt-springs and much gypsum. Fishes are the distinguishing fossils of this great Russian system; and among these are species which have been described from deposits of the same age in Scotland. These fish-beds have been traced for many hundred miles, occupying several stages in the system.

3. *Carboniferous System.* — In the northern and central regions of Russia, only the lower or calcareous part of this system exists. The lower beds consist of incoherent sandstones and bituminous shale, which sometimes contain thin beds of impure pyritous coal, and impressions of several plants well known in the coal formations of Britain. These are overlaid with various bands of limestone, only the lower of which have some mineralogical resemblance to the mountain limestone of western Europe. Some beds are undistinguishable from the magnesian limestone of England; others from a pisolite; while a third great and very prevalent band, of considerable thickness, is milk-white, and not more compact than the *calcaire grossier* of Paris. This white producta limestone was observed by Messrs. Murchison and Verneuil from the neighbourhood of Moscow to beyond Arkhangel, a space of not less than a thousand miles, and was found to range far into the country of the Samoieds. This formation has also another mineralogical resemblance to chalk, in being loaded with thin bands of flint, which are sometimes concretions invested with corals. Associated with it, on the banks of the Dvina, about 133 miles above Arkhangel, and south of Susskaia, are splendid bedded masses of white gypsum or alabaster, which, for many miles, present at a little distance all the appearance of white limestone. These are probably the largest masses of this kind in Europe. The carboniferous limestone of Russia is highly fossiliferous, and from the normal and unaltered condition of the beds, the specimens are generally in an excellent state of preservation.

4. *Oolite Series.* — When Messrs. Murchison and Verneuil visited Russia, it was still problematical whether there was or was not a series of strata to connect the lower carboniferous beds above described with certain rocks of the Oolitic system, which have been long known to exist in the south of Russia. Certain of these beds, which rest at once on the great red formation along the banks of the Volga, between Kostroma and Nishnei-Novgorod, belong unquestionably to the middle Oolite. These Oolitic shales rest on the white carboniferous limestone of Moscow, affording a clear proof that coalfields are not to be looked for either in the country round Moscow, or anywhere to the northward.

5. *Ferruginous Sands, &c.* — The lias is covered with ferruginous sands, containing here and there large flattened concretions of grit, which are used for millstones; but no fossils have yet been observed in this rock. 5. The *Cretaceous System* is largely developed in the south of Russia, and a white shelly limestone, belonging to the *Tertiary System*, and overlying the chalk, has been found in the Crimea; but no such deposits have yet been discovered in any of the northern or central regions.

6. *Younger Pliocene.*—When Messrs. Murchison and Verneuil visited Russia, it was the general belief that all the great masses of superficial detritus, which cover so large an area, were referable to the diluvian epoch, when the bones of the great extinct quadrupeds were also imbedded; but, though the time to which their journey was restricted was not sufficient to enable them to make many distinctions of age among the different masses, yet they have discovered enough to demonstrate that, during the modern period, the whole of the vast flat country of Russia was beneath the sea for a considerable time.

Overspreading all the older formations, and greatly obscuring them, is a vast mass of detritus, the large granitic blocks of which have excited so much attention from the days of Pallas to the present time; and which seems to have been all derived from the north.—(" *On the stratified deposits which constitute the Northern and Central Regions of Russia," by Messrs. Murchison and Verneuil, reported to the meeting of the British Association at Glasgow, September* 1840. *Athenæum,* 800.)

SOIL AND VEGETATION.—In a country of so large dimensions there must necessarily be great variety of soils. There is a vast tract of country, of about 796,000 square miles (65,000 square geographical leagues), which possesses a peculiar and rather remarkable soil, consisting entirely of decomposed vegetable matter, which forms a stratum, varying in thickness from three to five feet. This tract is situated in the middle and south of Russia, stretching in a broad belt from Volhynia, in a north-easterly direction, to the foot of the Urals, near Perm, and southwards to the Black Sea and the Caspian. The land is so productive as not to require manure; and its fertility is proved by the large returns of grain which it yields, and the excellent breeds of cattle which are reared upon it. Considered generally, the territory of Russia, from the 44° to the 50° north lat. is for the most part low and level, scantily wooded, partly very fruitful, and partly barren, and here and there impregnated with salt. Between the Dnieper and the Dniester the soil is much impregnated with nitre; but, as soon as this is removed or diminished, wheat, millet, and the arbutus melon may be successfully cultivated. The mildest and most fertile region, however, is that succession of valleys along the southern coasts of the Crimea, where the vine and garden fruits, of excellent quality, are produced in such abundance as to form an article of commerce as far as Moscow. Proceeding eastward into the government of Astrakhan, only that part of the soil is fertile which extends along the low banks of the Volga, the Ural, and the Terek, in which tracts vegetables attain an enormous size. The soil is here impregnated with saline and bituminous substances. Higher up, the land on the Volga becomes sandy and unproductive. The soil of Little Russia and the Polish Ukraine is partly sandy, and not very productive; partly very rich and fertile. A great part of Western Russia is sandy, and is intersected by extensive marshes and bogs. Large tracts of it are likewise covered with forests; whilst no inconsiderable portion ranks amongst the most fertile in the empire. The middle region, extending from 50° to 57°, is the wealthiest and most densely peopled portion of Russia; and consists of wide, open, undulating plains, with only slight elevations to break the monotony. The northern region, from 57° to 67°, is, with the exception of the mountains of Finland, and the declivities of the Urals, a continuation of the same flat country, upon which forests, meadows, marshes, and moors, alternate. The poor starved soil ensures the husbandman a return only so far as the 60°, beyond which only slow-growing wood succeeds; and, beyond 67°, only dry stunted shrubs.

The Russian forests are the most important of the vegetable productions, not only from their enormous extent, but from their supplying in profusion the timber, tar, pitch, potash, and turpentine, which form a principal part of the commercial exports; and furnishing fuel, in a country nearly destitute of coal. Estimating the soil at 1,085,671,490 acres, 421,200,000 are occupied by forests; 480,600,000 by uncultivated land, water, houses, and roads; 166,050,000 by arable, and a little more than 16,700,000 by meadow land. So many as 205,200,000 acres are still completely covered with pines, firs, and other coniferous trees, without taking into account the oaks, maples, beeches, poplars, and elms, which are by no means rare in the latitudes within the 52°; and the birch, which grows in more northerly regions. The Scotch fir is by far the most abundant, and grows to a great height and size. Next to it in abundance is the common birch, which, however, is confined to particular districts, and is intermixed but little with the large forests. The other principal trees are beech, maple, elm, alder, willow, and ash, many of which attain a great height, though, in comparison with the pines, they form but a small proportion of the forests. The governments of Novgorod and Tver are studded with forests; that of Volkhonskoi, which extends to the Valdai hills, is one of the largest known. In the government of Perm, out of 48,600,000 acres, 45,900,000, or 17-18ths are forest. These immense forests are a great blessing in so rigorous a climate, as, besides supplying fuel, they form a shelter from the cold north winds. The provinces to the south have not the same necessity

for them, and are so destitute of wood, that grass and dung are generally used for fuel. The trees furnish timber of the finest and most durable quality, for house and ship building, household furniture, and utensils; and the firs even supply torches, which the peasantry use instead of candles. The brushwood, which covers a large extent of forest country, consists almost entirely of the hazel, dwarf-birch, alder, willow, and juniper; and, in some places, the wild bilberry and the cranberry, of the latter of which large quantities are exported. It is in these immense forests that the wild honey is obtained for which Russia is celebrated. The bees make their hives in the hollow trunks of aged or injured trees. The exportation of timber furnishes a considerable item of the government revenue, as well as of the private fortune of the proprietors, whose estates are within reach of water carriage, and is the principal source of labour to their peasants.—*(Short Account of the Forest Trees and Timber Trade of the Interior of Russia, by Wm. Howison, M.D.—Edin. Phil. Journal, XII. 56.)*

Russia is chiefly an agricultural country; and the cultivated land is so extensive, and yields, in many parts, such abundant crops of grain, that enough is produced, not only for home consumption, but also for exportation in considerable quantity. The grains most commonly cultivated are rye and oats; but, in Southern Russia, the best wheat with millet and rice are produced. Hemp and flax are very largely cultivated, and, besides supplying the home manufacture, yield a large surplus for exportation. While corn and cattle constitute the wealth of Central Russia, the south abounds in productions of a more precious and delicate kind. The cultivation of the vine, an indigenous plant, has been carried to a great extent in the southern part of the Crimea; but, though it has there the advantage of a good situation and a fine climate, yet the produce does not remunerate the labour of the vine-dresser, nor is the wine remarkable either for flavour or strength. The vine cultivation, however, is extending in the governments of Astrakhan, Kherson, Podolia, the country of the Don Cossacks, Taurida, and Caucasus. The mulberry tree has been as carefully attended to as the vine, and, upon the whole, with a favourable result. Large plantations of this tree have been formed near all the principal towns; and every encouragement is held out by government to the planters. In the Crimea and the Caucasus, the rearing of the silk-worm is rapidly extending. Experiments have also been made in cultivating sugar-cane and indigo, but hitherto without much success. There is, besides, in Southern Russia, a great variety of fruits and vegetables; and, in summer, the country everywhere presents the most enchanting aspect, and is covered with a profusion of the finest flowers and aromatic herbs. Russia likewise produces hops, tobacco, and garden vegetables of the usual European varieties. Spanish pepper is raised on the Samara and Lower Volga; poppy in Kharkoff; rhubarb grows wild in Taurida; rhapontick in the Urals; and the polygonum minus, which grows in the Ukraine, engenders worms that yield a beautiful crimson dye. Many plants, useful in dyeing, grow wild; and there are also several plants valuable in tanning.

ANIMALS. — The quadrupeds of Russia are numerous, and some of them appear to be peculiar to the country. Cattle of every kind are bred in vast numbers in the Steppes, and are increasing with the improvement of agriculture. Beeves are reared as far north as the 64°, but are most abundant in Podolia and the Ukraine. Some of the calves in the last province weigh from 480 to 600lb. Sheep are reared to a great extent, and are supposed now, not to fall short of sixty or seventy millions. Merino sheep have been naturalized in Little Russia, in New Russia, and in the Baltic provinces. Besides supplying the woollen manufactures at home, large quantities of wool are now exported. Great attention is also paid to the breed of horses, which thrive upon the Steppes; shawl wool-goats have been introduced; and, besides these, there are camels in Taurida and Kherson; asses in Taurida, swine, buffaloes; and, in the north, the reindeer, so valuable to the inhabitants of those sterile regions. The forests contain great numbers of bees, which yield an abundance of honey and wax for exportation. There are also many wild animals, the skins or furs of which constitute important articles of trade in the northern parts of the Empire; and abundance of others, whose flesh is used for food. Birds are very numerous; fish abound in the seas, lakes, and rivers; and the fisheries constitute an important branch of productive industry.

PEOPLE AND POPULATION. — No state in Europe presents a greater variety of races; but they may all be reduced to the following stocks: — The SLAVONIC, which comprises, 1. The *Russians*, distinguished as Great Russians or Muscovites, Little Russians, Rusniaks and Cossacks; 2. *Poles*, who inhabit the various governments which formed the late kingdom of Poland; 3. *Lithuanians*, *Lettons*, and *Kures*, who

are found along the coasts of the Baltic, and in the north-eastern part of Poland. The TSHOUDE,* or FINNISH Stock, which comprises the *Finns*, who occupy Finland, the *Carelians*, *Esthonians*, *Cheremisses*, *Votiaks*, *Lapons*, *Lives*, *Zyraines*, *Voguls*, *Permians*, *Mordva* or *Mordâins*, and a part of the *Teptiares*. These tribes are found on the coasts of the Gulf of Finland, and throughout Northern Russia. The TURKISH Stock, improperly called TATAR or TARTAR, which comprises the *Tartars of Kasan* and *Astrakhan*, the *Türkomans* of Caucasus, the *Nogais* and other Tartars in the Crimea, the *Bashkirs*, the *Châvasches*, the *Metcherieques*, a part of the *Teptiares*, &c., extending over a large portion of the south-eastern and southern provinces. The GERMAN or DEUTSCH Stock comprises the *Germans* who live in the governments of Riga, Revel, St. Petersburg, Mitau, &c., and the numerous colonies in Saratov and Taurida. The GOTHIC Stock comprises the *Swedes*, who form a considerable portion of the population of Finland. Besides all these, there are many English, Scotch, Danes, and other foreigners, throughout the country, but chiefly in the commercial towns; Jews, Armenians, Moldavians, Wallachians, Persians, Calmucks, Hindoos, Samoyedes, and Laplanders. Of these various races, the Great Russians or Muscovites are the most numerous, comprising nearly three-fifths of the entire population. They are found chiefly in Central Russia, round Moscow, where the country is densely peopled, and where their numbers are rapidly increasing.

The Russians formerly bore the name of *Antes;* and consisted of several independent tribes, who formed a kind of confederation, till Rurik established a central government in the year 862. Rurik belonged to the Scandinavian tribe of Varing, and was invited to assume the government by the republic of Novgorod the Great; the citizens of which, being partly of Slavonian and partly of Tshoude or Finnish extraction, agreed, as one means of appeasing their mutual animosities, to select their rulers from a third nation. The Varing, as their name indicates, were a bold confederated people, and their country was called by the Tshoudes *Ruotzi*, or *Ruossimaa* (Uplandia, Roslagen in Sweden), for which appellation the Antes now exchanged their own, giving to themselves the name of Rusini, and to their country that of *Râs*. Rurik's successors extended by conquest their authority over all the other tribes of Antes; and, having established their capital at Kioff, reached the zenith of their power, under Vladimir the Great. In the tenth century the boundaries of Russia were the Lakes Ilmen and Ladoga, the Upper Volga and the Oka, the Upper Don, the Lower Dnieper, and the Black Sea, down to the mouth of the Danube, the north-eastern chain of the Carpathian mountains, the Bûg, and the Upper Duna. Vladimir introduced Christianity into Russia (A.D. 983) according to the Greek ritual. His empire was subsequently overthrown by the Poles and the Lithuanians; and the greater part of it remained united with Poland till the close of the last century. The provinces, however, situated beyond the Dneiper, were conquered by the Tatars, and, on recovering their independence, in the sixteenth century, bore for some time the name of the Grand-duchy of Muscovy. The Muscovites, or Great Russians, as they are sometimes called, to distinguish them from the original or Little Russians, possess a less degree of Slavonic nationality than any other of the kindred nations, and are what historians term a bastard people; being composed of several tribes, as Slavonians, Tshoudes, and Tartars. Their language differs so much from the proper Russian idiom, that the latter is not understood by them without previous instruction, which is not the case respecting it with the Poles, Bohemians, and other Slavonians. Conscious of this absence of the Slavonian element, their learned men of the sixteenth century traced the origin of their nation to the *Ros*, a people mentioned by the prophet Ezekiel, instead of the Slavonian race; and the inhabitants of Great Russia, or Muscovy, have since called themselves *Rossianie*, and their country *Rossia*. Not less remarkable was the change which they introduced into the grammatical structure of their language; and their separation from the ancient Russians was completed when the latter, under the Polish Government, acknowledged the spiritual supremacy of Rome, while the Muscovite church declared itself independent of Constanti-

* *Tshoude* is only a remote approximation to the Slavonic word, which is variously spelled *Cud*, *Scud*, or *Czud*, the proper sound of which cannot be represented by any combination of Roman letters. Wherever the letters *cz*, *tz*, or *tsch*, are found in Slavonic names, as in Czar or Tzar, Galacz or Galatz, Priepecz or Priepetz, Tscheringov, &c., they are intended to represent the Slavonic *c*. Probably it might be better represented by the English *ch*, sounded like *tsh*, were it not that *ch* are rendered very equivocal by being sometimes pronounced like *k*, which makes *tsh* preferable, in order to prevent mistakes.—M. Safarik, in his Slavonian Antiquities, expresses his opinion that the ancient *Scythians* were of the Tshoude family; their name *Cud*, *Scud*, or *Czud*, he says, it would be impossible to render in Greek otherwise than by *Skuthes* or *Skuthui*. *Scythians*, some of our readers may not be aware, is only the English Latin form of the name. In Latin it would be properly pronounced *Skuthians*, the same as in Greek.

nople. — *Slavonian Antiquities, by P. J. Safarik, &c.* — *Foreign Quarterly Review, XXVI.* 70.

Among the various races above mentioned, the population is divided in the following proportions: — 1. *Slavonians:* Great Russians or Museovites, 32,000,000; Little Russians, Rusniaks, and Cossaeks, 6,000,000; Poles, 6,000,000; Servians, Bulgarian &c. 1,000,000; Lithuanians, 1,300,000; Lettons, 400,000; Kures, 300,000. 2. *Tchoudes* or *Finns:* Laps, 25,000; Finns, 1,300,000 to 1,500,000; Esthonians, 500,000; Livonians, 1000; Permaks or Permians, 35,000; Zyraines, 30,000; Voguls, 100,000; Votiaks, 100,000; Cheremisses, 200,000; Chûvaseh es, 370,000; Mordûins, 100,000; Teptiares, a mixed race of Finns and Tartars, in the government of Orenburg, 50,000. 3. *Germans:* 450,000. 4. *Turks* or *Tartars:* Krim-Tartars, 246,000; Tartars of Kasan, 150,000; Nogais, 400,000; Metcherieques, in Orenburg, about 10,000. TOTALS: Slavonians, 47,000,000; Tchoudes or Finns, about 3,000,000; Germans, 450,000; Turks or Tartars, 806,000. Total, 51,256,000 in European Russia, exclusive of the province of Caucasus. — *Thadaus Bulgarin's Russland. Statistik.* 203, 4, 5.

There are no certain data for ascertaining the amount of the population; but the following is the Abstract of Returns obtained through the British Consuls, and may be considered as a very nearly approximative statement of the amount of the population of the whole empire in 1836.

(A.)—STATEMENT of the POPULATION of RUSSIA in the Year 1838.

Specification.	*Males.*	*Females.*
Class I.—Paying Taxes.		
A. IN TOWNS.		
1. Merchants of the 1st Guild:—		
Christians . with 704 Licenees,	2,107	..
Mahommedans „ 6 „	19	..
Jews . . „ 36 „	218	..
Total,	2,344	..
2. Merchants of the 2d Guild:—		
Christians . with 1,439 Licenses,	5,008	..
Mahommedans, „ 8 „	36	..
Jews, . . „ 68 „	440	..
Total,	5,484	..
3. Traders of the 3d Guild:—		
Christians, . with 29,912 Licenses,	105,860	..
Mahommedans, „ 425 „	2,417	..
Jews, . . „ 2,573 „	12,749	..
Total,	121,026	..
Total of the three Guilds,	128,854	118,520
4. Burghers and Members of Corporations:—		
Christians,	801,496	..
Mahommedans,	15,557	..
Jews,	484,894	..
Total,	1,301,947	1,399,875
Burghers of the Western Government,	7,525	6,966
Inhabitants of Towns in Bessarabia, Masyles, and Rutpaseh es,	10,970	10,445
Persons of the low classes—Christians,	34,613	45,731
„ Jews,	12,322	
Foreign Artisans (not included in the Total),	603	..
Total of Division A,	1,496,231	1,581,537
B.—PEASANTS.		
1. Peasants on the private properties of the Emperor's family,	37,374	41,488
" Apanage" Peasants,	695,402	721,772
Peasants belonging to the service of His Imperial Majesty's Cabinet, of the Chief Intendent's Office, and of the Kremlin Expedition,	4,406	4,693
2. Domain Peasants:—		
a. Paying Poll Tax and Rent:—		
Odnodworzen (owners of one farm),	1,237,443	1,287,990
Peasants of the former Panzer-Bojars,	6,007	6,074
Cossaeks of Little Russia,	533,691	555,275
Military Peasants in the territories of the Cossaeks, Tepters, and Lostreibs,	99,368	98,883
Crown Peasants, of various descriptions,	4,819,620	5,390,883
Military Settlers,	59,454	50,775
Without Masters, received into the Service of the Crown,	1,242	1,455

Specification.	*Males.*	*Females.*
Purchased from the Prince Golitzyn,	19,396	20,247
In the Siberian Governments, born thercin,	29,590	27,328
In the Siberian Governments, Settlers,	18,083	11,433
Employed in the various Crown Works and Manufactories,	159,988	165,673
b. Paying only Poll Tax:—		
Crown Peasants in the Western Governments,	102,401	102,155
Starostei Peasants,	213,457	201,584
Jesuit, „	32,504	29,860
Peasants holding a Feudal Tenure,	13,151	16,434
Peasants upon Confiscated Properties,	116,607	117,728
Crown Peasants in the East-Sea Governments,	118,015	127,044
Moguls and Samoyedes, paying a tribute of Furs,	3,043	3,264
Settlers in Kamschatka,	410	371
c. Paying Special Taxes:—		
Owners of one farm in the Western Governments,	121,074	106,762
Free Persons in ditto,	129,632	129,690
Mahommedans settled in the Taurus Government,	124,592	106,703
Masyles and Rutpasches in Bessarabia, *viz.*, Christians,	249,486	224,465
„ „ Jews,	9,165	
Trans-Danubian Colonists,	20,197	18,827
Grecks, Grusinians, Bulgarians, Armenians, and Bukhars,	21,663	19,738
Jurten Tatars in Astrakhan,	10,905	8,872
Colonists settled on Crown Lands,	99,577	99,426
Jews engaged in Agriculture,	3,637	3,300
d. Employed in various services, and paying only Poll Tax:—		
Church Peasants in the Western Governments,	130,011	126,263
Jesuit Peasants,	14,074	13,705
Rural Clergy Peasants in the East-Sea Governments,	10,854	11,364
Belonging to Public Establishments,	26,303	27,092
Freeholders,	70,277	76,859
Belonging to Towns and Magistrates,	16,525	18,113
Belonging to Crown Studs and Manufactories,	146,925	158,302
Belonging to the Service of the Comandants of St. Petersburg and Kief,	3,106	3,174
Belonging to the Cadet Corps of Araktschejev,	2,225	2,299
Pilots,	1,167	1,259
Nomadic and wandering Tribes in the Siberian Governments, paying a tribute of Furs,	203,813	208,729
3. Peasants on Private Properties paying only Poll Tax:—		
Seignorial,	10,781,709	11,295,914
Domestic Servants,	451,272	
"Ordinat-bauern,"	83,876	84,135
Employed in Private Works and Manufactories,	46,989	48,582
Peasants of Owners of one Farm,	10,983	10,215
Free Owners of Land,	106	106
Peasants holding half a Farm (Hälftler),	2,723	2,580
„ in the East-Sea Governments, possessing peculiar privileges,	477,336	517,341
Total of Division B,	21,517,325	22,697,171
Total of Class I.	23,013,556	24,278,708

Class II.—Temporarily Free from the Payment of Taxes.

A. In Towns.

1. Merchants of the 1st Guild:—		
Christians, with 151 Licences,	208	..
Jews, „ 16 „	51	..
Total,	259	..
2. Merchants of the 2d Guild:—		
Christians, with 184 Licenses,	214	..
Jews, „ 27 „	25	..
Total,	239	..
3. Merchants of the 3d Guild:—		
Christians, with 1,050 Licenses,	1,420	..
Jews, „ 281 „	382	..
Total,	1,802	..
Total of the three Guilds,	2,300	2,050
4. Burghers and Members of Corporations:—		
Christians,	37,324	34,107
Jews,	163	
Total of Division A,	39,787	36,157

B. Peasants.

Domain Peasants, *viz.*—		
Odnodworzen (owners of one farm),	771	1,063
Crown Peasants, of various descriptions,	15,589	12,937
Settlers in the Siberian Governments,	18,494	13,230
Dwellers on Crown Lands in Bessarabia,	2,285	1,689
Trans-Danubian Colonists,	9,741	8,266

Specification.	*Males.*	*Females.*
Colonists,	1,525	1,251
Free Persons in the Western Governments,	352	407
Total of Division B,	48,757	38,843
Total of Class II.	88,544	75,000

Class III.—Not Paying Taxes.

A. CLERGY.

1. Græco-Russian.—*a.* Priests,	52,331	..
b. Church Servants,	63,178	..
c. Male children,	138,548	..
Total,	254,057	249,748
2. United Greeks,	7,823	7,318
3. Catholic,	2,497	Male & Fe.
4. Armenian,	474	343
5. Lutheran,	1,003	955
6. Reformed,	51	37
7. Mahommedan Mullas,	7,850	6,071
8. Lamas,	150	..
Total of Division A,	273,905	264,472

B. IN TOWNS.

Honorary Citizens,	193	141
Nessian Greeks,	897	897
Labourers in the Tula Manufactory of Arms,	8,634	8,634
Apothecaries' Pupils,	480	481
Town Brokers engaged in the service of Towns in the Government of Esthland,	28	28
On the Property of the Town Hospital in ditto,	843	900
Total of Division B,	11,075	11,084

C. PEASANTS.

1. Free Owners of Land in the Government of Olonetz,	418	411
2. Retired Soldiers,	32,146	36,879
3. Free Owners of Land in the Government of Kostroma,	105	121
4. Free Peasants in the Governments of St. Petersburg and Iekatcrinoslav,	54	47
5. Peasants attached to the Imperial Palaces,	4,364	2,764
6. Pilots at the Waterfalls of the Dnicper,	1,289	1,328
7. "Post-Peasants,"	40,130	43,328
8. Church Servants dismissed on account of advanced age,	22	15
9. Orphans and Poor,	280	255
10. Salt-Carriers in the Government of Saratov,	166	159
11. Attached to Mines, Brandy Distilleries, and Saltworks,	127,006	102,707
2. Banished Criminals who must provide for themselves,	18,706	13,806
13. Grave-diggers in Bessarabia,	215	176
14. Pupils at the College of the General Asylum,	413	258
15. Servants of the "Archiereis" and of Convents, not exceeding the prescribed number,	5,639	5,548
16. Persons of various Rank, whose Origin and Classification are yet undetermined,	48,086	37,671
17. Nomadic Kalmucks,	44,532	44,532
18. „ Kirgheses, on this side of the Siberian and Orenburg Frontier,	161,505	177,450
19. Mahommedans of various Classes in the Caucasian Province,	39,678	40,000
Total of Division C,	524,754	507,435
Total of Class III.	809,734	782,991

Class IV.—Belonging to the Military Service.

1. Regular Military Colonies,	226,047	272,082
2. Cossacks, *viz.*—		
Of the Don,	214,362	215,033
„ the Black Sea,	60,268	50,802
„ the Caucasian Frontier,	67,645	66,970
„ Astrakhan,	6,284	6,420
„ Azov,	3,098	2,650
„ the Danube,	4,036	2,860
„ Orenburg,	47,120	48,777
„ the Ural,	23,642	22,202
Baschkirs and Metchericques,	232,496	228,292
Kalmucks of Stavropol,	1,882	1,703
Of the Siberian Frontier,	45,636	46,277
„ „ Towns and Frontier,	18,182	17,409
Total of Class IV.	950,698	981,467

Class V.—Persons not included in the Revision Lists.

1. Nobles by Inheritance, who are entered in the Genealogical Register,	284,731	253,429
2. Personally Noble,	54,468	51,123
3. Children of Superior Officers,	24,454	23,150
4. Officials in Courts of Law,	24,666	17,194
5. Rasnotschinzes (Persons free from Tax, but not enumerated in any particular Class,	73,675	64,981

Specification.	*Males.*	*Females.*
6. Retired Soldiers,	88,706	155,268
7. Foreigners,	22,114	15,215
Total of Class V.	572,814	580,360
Class VI.—In the Trans-Caucasian Possessions.		
1. In Grusia,	169,525	169,525
2. „ Imcretia,	76,119	76,119
3. „ Guriel,	15,533	15,534
4. „ the Provinces of Daghestan,	68,712	68,712
5. „ the Musulman Provinces,	166,761	166,761
6. „ the Province of Armenia,	82,315	82,316
7. „ the Paschalic of Akhalzykh,	17,143	17,143
8. „ Mingrelia,	30,804	30,804
9. „ Abkhasia,	22,245	22,245
10. „ the Khanat of Kusükumeik,	15,000	15,000
11. „ „ Mechtulinsk,	10,000	10,000
12. „ the Free Communes of Akuscha,	15,000	15,000
Total of Class VI.*	689,157	689,159
Class VII.—Kingdom of Poland.		
Total Population,	2,077,311	2,110,911
Class VIII.—Grand Duchy of Finland.		
Total Population,	663,658	408,464
Class IX.—In the Possessions of the Russo-American Company.		
1. Kalosches,	5,761	5,292
2. Other Tribes dependent upon the Company,	25,000	25,000
Total of Class IX.	30,761	30,292
Total Population of the Russian Empire,	28,896,233	30,237,352
	59,133,585	

ABSTRACT.

Classes.	*Males.*	*Females.*	Total.
1. Paying Taxes,	23,013,556	24,278,708	47,292,264
2. Temporarily Free from the payment of Taxes,	88,544	75,000	163,544
3. Not paying Taxes,	809,734	782,991	1,592,725
4. Belonging to the Military Service,	950,698	981,467	1,932,165
5. Not subject to Revision,	572,814	580,360	1,153,174
6. In the Trans-Caucasian Possessions,	689,157	689,159	1,378,316
7. In the Kingdom of Poland,	2,077,311	2,110,911	4,188,222
8. In the Grand Duchy of Finland,	663,658	708,464	1,372,122
9. In the Russian Possessions in America,	30,761	30,292	61,053
Total,	28,896,233	30,237,352	59,133,585†

The increase of population in Russia appears to be equal to that in any other European country. The ratio of deaths to the population is one in 44, or, according to Hermann, one in forty; the proportion of births to the whole population is one in twenty-five; the general proportion of births to deaths in the whole empire is nearly 16 to 10; and the proportion of the births of males to those of females, is 44 to 40. According to Bulgarin's tables, the total number of births in the thirty years 1804–33, was 45,795,604; and of deaths 30,560,727; the former exceeding the latter by 15,234,877, and bearing the ratio of 156 to 100. The number of male births in the 33 years. 1801–33, was 25,960,115; and of female, 23,696,068, being a proportion of 109 to 100.—(*Thadaus Bulgarin's Russland Statistik. Riga and Leipzig* 1839.) The instances of longevity are remarkable. In 1821, when the deaths were reckoned at 945,088, of these 221 were above 105 years of age; 120, above 110; 78, above 115; 49, above 120; 16, above 125; five, above 130; one, 145; one, 150; and one, 155.

* The number of Inhabitants in the Trans-Causasian Provinces here given is merely an approximation.

† Exclusive of the conquered and unconquered Mountaineers inhabiting the country between the Black and Caspian Seas, who are estimated at 1,445,000 individuals, and the Kirgheses, who are Russian subjects, but live beyond the Orenburg and Siberian Frontier, together with the "Double Tributaries," whose number is unknown.

The settled population of Russia is divided into six great classes, namely, Nobles, Clergy, Citizens, Peasants, Serfs, and Slaves. The *Nobles*, though distinguished by different titles, are all placed upon an equality. They have no political privileges whatever, and, though hereditary, have no rank but what the Emperor confers; their persons and lands, however, are free from taxation, from forced military service, and from bodily penalties. But these exemptions are more apparent than real; for, though their lands and persons are not taxable, yet a capitation tax may be imposed on their slaves, who form the most valuable part of their possessions; and they are bound to furnish from their estates a certain number of recruits in proportion to the demands of the service. There are fourteen classes of nobility; most of the public employments are filled by nobles; and none is eligible who does not belong to one of the fourteen classes of rank into which the officers of the civil and military service and the clergy are arranged. The *Clergy* are exempt from taxation and corporal punishment; privileges which are extended to their eldest sons, who are liable, however, to military service. Every inhabitant of a town, who is neither noble nor the property of another, is a *Citizen;* and citizens are divided into four classes, styled notables, and members of the three guilds. The next class is that of *Peasants*, or free inhabitants of the country, distinguished into six classes—*first*, the old proprietors who cultivate their own lands, but have not the right of possessing slaves; *second*, the Tartars, Baschkirs, and other races in the south-east, who are all proprietors of the lands they cultivate; *third*, the peasants of Finland, who are all now either proprietors or free-renters; *fourth*, colonists, of foreign origin, settled in different parts of the empire, to the amount altogether of 65,000; *fifth*, the inhabitants of the military colonies in the southern provinces; and *sixth*, the free cultivators, who enjoy immunity from taxes on condition of keeping post-horses for the public service, which they furnish at a charge regulated by government. Below the peasants are the *Serfs*,* who are chiefly peasants on the crown lands, or in the province of Livonia. The crown peasants amount to about twelve millions, some of whom labour in the fields, and others in the mines and manufactories. They may rise to the rank of citizens, and acquire property; they enjoy the protection of the laws, and, under some restrictions, may quit their residences for a limited time to obtain employment elsewhere; but they are liable to be hired for the service of the mines, or to be sold. The peasants of Livonia, amounting to about 560,000, were slaves until the year 1804, when they first obtained the rights of serfs. They are still subject to some peculiar claims, which, however, are fixed, and they cannot be removed from the soil without their own consent. The last and most numerous class is that of *Slaves*,* whose number is about 23,000,000. They are in law considered as *things*, not as *persons;* are attached to the soil, and incapable of acquiring property in land; may be bought, sold, or exchanged, with little more ceremony than cattle; and have no other protection against their master than a regard for his own interest in their welfare. They belong to the nobles, or to such civil or military officers as have acquired the right of possessing slaves. They are divided into agricultural, mining, manufacturing, or domestic slaves, and the only chance they have of improving their condition is their being drawn to serve in the army. A Russian proprietor reckons the value of his property, not by its annual income, but by the number of male slaves upon it; but the relation in which the agricultural serf or slave practically stands to his master, is in most respects that of a small tenant; the principal difference being, that he cannot change his employment or move from home, without his master's leave, which is sometimes obtained for a certain annual sum, called obrok, in lieu of service. As a general rule, he has a house and a portion of land, for which he pays rent in labour instead of money; working three days a-week for his master, and having the other three at his own disposal. The slaves are grossly ignorant, undoubting fatalists, and habitually careless and improvident; yet they are contented and happy, and bear about them no signs of oppression; their desires are few and easily satisfied; their fare is coarse and poor, but they seldom suffer from cold and hunger, and they are naturally gay, good humoured, and light hearted. They cannot legally be sold or transferred to another master, except with the whole of their family. The station of domestic servants is much worse than that of the agriculturists. As the riches of the Russian noble consist in the labour of his peasants, it is his study to turn that to good account; the law, besides, requires him to maintain them, and, if they are found begging, he is liable in

* These two classes are usually confounded under the common name of *serfs*; but, after all, the principal distinction between them is, that the former class belong to the Crown, while the latter are the property of subjects.

a fine. He is therefore obliged to keep always a certain number of people, whether they are useful to him or not; and as every kind of out-door labour is at a stand during the winter, he naturally turns to the establishment of some sort of manufactory as a means of employing them, and as a source of profit to himself. And not only are the nobles manufacturers, but they carry on the business in every branch; and their privileges give them great advantages over the other classes who are not allowed to possess slaves. No people in Europe are so plainly or coarsely fed. Their daily fare consists of pickled cucumbers, cabbages, and mushrooms, with a piece of black bread. Fish and butcher-meat are seldom tasted by the poor.

Education. — Previous to 1835, all the civil schools in the empire were dependent upon the universities established in the several circuits; but by an ukase, dated 25th June of that year, they were placed under the minister of public instruction, who is represented in the circuits by sub-delegates, called curators. Public education is thus subjected to the direct control of government. But, besides the minister of public instruction, each separate branch of the administration superintends the schools connected with its own department. The schools may thus be arranged in four classes: — 1. Schools which depend upon the minister of public instruction; 2. Military schools; 3. Ecclesiastical schools; 4. Special and various other schools. The first class is subdivided into — 1. Parish schools, intended for the lower orders, and allowed to teach only the catechism, reading, writing, and the first four rules of arithmetic, but which, far from being restricted to one in each parish, may be established wherever the want of them is felt; 2. District schools, which have three classes, intended for the children of shopkeepers, and are restricted in their course of instruction to the catechism, writing, drawing, the rudiments of grammar, arithmetic, geometry, geography, and history; 3. Gymnasiums, which are distributed by government, divided each into seven classes, and authorised to embrace higher studies, but accessible only to the children of the nobility; and, 4. Universities, which consist each of three faculties, philosophy, jurisprudence, and medicine, of which the courses last five years. The University of Dorpat has also a faculty of theology. The other universities are those of St. Petersburg, Moscow, Kharkoff, Kasan, White Russia, and Kief. The total number of gymnasiums in 1835, was 67; of infant schools, 2563; and of pupils, 85,707; the number of the last had increased, in 1837, to 95,560. The oldest of the universities, and only two that enjoy any reputation, are those of Dorpat and Vilna; the former established in 1630 by Gustavus Adolfus King of Sweden; and the latter, in 1567, by Stephen Bathory, King of Poland. The university of Vilna has been stripped of its rich endowments, libraries, and museums, which have been transferred to Kief, and is now reduced to two chairs, one of medicine, and one of theology. As a part of the general system, the Russian language has been substituted for the Polish in all the schools of Poland. Private schools are likewise placed under the inspection of the local authorities, and can make use of no books but those appointed by government. The establishment of new private schools is prohibited at Moscow and St. Petersburg, and is allowed in other places only to such foreigners as shall have resided five years in Russia, and have, by naturalization, become Russian subjects. No father has the power of selecting the instructors of his children at his own pleasure; he must take them from among the persons licensed by government, or furnished with an authority which gives them the character of public functionaries. Education in any foreign country is positively prohibited to all under 18 years of age, and even after that age, it is only the Emperor himself who can grant the necessary permission.

The military schools are those which chiefly engage the solicitude of the government; and, accordingly, they increase daily, and absorb the greater part of the funds allotted to national education. Nevertheless, there is no army so poor as the Russian in able officers; a circumstance which can be ascribed only to the bad organization of the schools, which are calculated less to diffuse knowledge than to supply the government with men less unmanageable, and more extensively and more variedly effective. These schools are divided into three classes: — 1. Those under the direction of the Grand-duke Michael, which are dispersed over the empire under the titles of corps of pages, corps of cadets, &c.; 2. Those under the management of the Admiralty, designated corps of navy cadets, battalion of pilots, and of instruction for workmen, are to be found only at St. Petersburg, Cronstadt, Sebastopol, and Nikolaef; and 3. Schools dependent upon the ministry of war, which are especially appropriated to the children of soldiers, divided into brigades of cantonments, and situated in the military colonies.

The ecclesiastical schools, designed chiefly for the education of the clergy, are divided into three circuits, those of St. Petersburg, Moscow, and Kief. Each circuit is composed of superior schools or academies, of intermediate schools or seminaries, and of lower schools in the smaller districts and parishes. They are under the superintendence of the Holy Synod.

The special and various schools are superintended by different ministers, or are committed to the special inspection of members of the Imperial family. Under the Treasury are placed: — 1. The schools of mines at St. Petersburg, and in the principal mining districts; 2. The practical institute of technology, founded in 1828, intended to form master manufacturers, but still in its infancy; 3. The school of mercantile marine, founded in 1829 at St. Petersburg and Kherson, intended for the education of pilots; and 4. The institutes of foresters, trade, and agriculture, all recently founded, and of little importance. Under the Home Office are the schools of medicine, surgery, pharmacy, the rural schools for the cultivation of the vine, and of general horticulture, established in different places, but which have not yet come into operation; the schools for the sons of persons employed in subaltern situations in public offices, and who are supported by the state on condition of serving it for eight years; and the hospitals for orphans, and schools for the poor. Under the ministry of the Imperial Household are the Moscow academy of the fine arts; the Moscow school of architecture; the theatrical school of St. Petersburg; and the Court school of singers. The Ministry of Appanages supports some schools of agriculture, and primary schools for the peasants on the appanages of the princes. Under the general directory of roads and communications, is a school of civil engineers and conductors, organised in 1831 and 1832. Under the Ministry of Justice there has been, since 1835, a school of jurisprudence and one of land-surveying, intended to form lawyers and geometricians for the service of government. The Foreign Office, since 1823, has supported an oriental institute, consisting of six pupils, each with an allowance of £40 a-year, intended to supply with interpreters the diplomatic missions in Asia. The Empress has under her charge the foundling hospitals, the boarding-schools for young ladies at St. Petersburg, Odessa, and Moscow; and some patriotic establishments founded by private individuals, chiefly for the education of the children of indigent or invalid officers. The Grand Duchess Helena superintends the Maria institute at St. Petersburg, founded in 1797 for the daughters of citizens, and for the servants of the imperial palace; and also the school of Alexander at Paulowsk, founded in 1835 for children of both sexes. To these must be added the German schools of St. Peter, St. Anne, and St. Catherine at St. Petersburg, and those of the German colonies; the Tartar schools; and the Jewish schools; in the last of which, out of a Jewish population of one million, there are only 500 pupils. The total number of pupils attending all these is stated by M. Krusenstern* in 1837, as follows: — Schools of the Ministry of Public Instruction, 85,707; military schools, 179,981; ecclesiastical schools, 67,024; and all the others, 127,864; total, 460,576.

Besides the institutions occupied directly in the education of youth, Russia has also academies of sciences, learned societies, public libraries, and museums. The Academy of Sciences in St. Petersburg, founded in 1727, has acquired considerable celebrity; but, from its origin to the present day, it has been composed almost entirely of foreigners; scarcely one Russian name can be discovered among ten. Of the libraries, that of St. Petersburg contains 413,000 volumes; the library of the Hermitage, 100,000; the library of the Academy of Science, 90,000; and of the Universities of Dorpat, 60,473; Moscow, 50,712; Kief, 44,474; Kasan, 29,838; Kharkoff, 31,435; and St. Petersburg, 21,854. Among the museums, the Asiatic Museum at St. Petersburg is nearly unique in Europe, for the rarity and value of its collections. The museum of medals is likewise very interesting. In the whole empire 67 newspapers or periodical works are published. The Press is under a strict censorship, which, in university towns, is entrusted to committees, and everywhere else to censors specially appointed. The censorship of works relating to religion rests with the ecclesiastical bodies. Every book hostile to the creed of the Greek Church, to monarchical autocratic authority, to decency, to morality, to private honour, is prohibited; and the first duty of the censors is "to consider what is the object which the author has proposed to himself in writing his work."

* Precis du Systeme, des progres, et de l'etat de l'instruction publique en Russie, ...ge d'apres des documents officiels. Par Alexrde Krusenstern, Chambelan de SM. l'Empereur ...ussie. Varsovie, 1837. There are abstracts of this work in the Marquis of Londonderry's "...lections," vol. ii., and in the British and Foreign Review, No. 16, April 1839.

RELIGION. — The orthodox Greek church is the dominant religion of the empire; but all other religions are not only tolerated, but even freely professed, difference of creed being no obstacle to the attainment of public employments. The Russians, the Cossacks, Moldavians, Wallachians, and numerous proselytes among the Permians, Zyranians, Vogouls, Mordva, Samoyedes, Laps, and others, belong to the dominant church, which numbers about 45,000,000 of members. There are, however, some dissenters from its creed, named Raskolniks, &c. to the number of about 350,000. The Poles, Rusniaks, and Lithuanians, are Roman Catholics, or United Grecks; and the total numbers of that creed are about 3,500,000. The Finns, Lettons, Kures, Esthonians, Swedes, and Swedish Laps, and most of the German settlers, are Lutherans. Calvinism reckons but a small number of Poles and Germans. Islamism is professed by almost the whole of the numerous population of the Turkish or Tartar race, and the Arabs. The Jews, of course, follow the law of Moses. The Calmucks are worshippers of the Lama; and many of the Samoyedes, and other nomadic races, are idolaters or fetishists.

GOVERNMENT. — All power emanates from the Czar, whose authority is without limit or control. The title of *Samoderjetz* (autocrator), which the Czar assumes, indicates the nature of his authority, which he is presumed to derive only from God. He is the central point of the administration; and to his decision, or for his sanction, all important measures must be submitted. His authority is delegated to the great boards or colleges of the empire, which preside over the central administration, and to the governors-general, and other local functionaries. The three great Boards of Administration are, the Council of the Empire, the Directing Senate, and the Holy Synod. The first is divided into four departments, those of legislation, of war, of civil and religious affairs, and of finances. The ministers and a secretary of the empire form part of this board, which has the charge of all important affairs, with the exception of those relating to foreign policy. The Directing Senate is considered as the highest council of State. The Czar himself is its president, and he names the senators, whose number is indefinite. This Senate superintends the execution of the laws, and the receipt and expenditure of the public money; promulgates the laws and edicts authorised by the Czar, appoints to public employments, and judges as the last resort in all legal causes. The Holy Synod is the senate in which is vested the supreme authority of the Græco-Russian church, and is composed of a certain number of prelates, named by the Emperor, who is himself the sole head of the church, and presents to all ecclesiastical offices. The executive power is confided to ministers and secretaries of state, who form a fourth board, named the Committee of Ministers, but which is subordinate to the three great bodies already mentioned. Russia is a monarchy, absolute and hereditary, but the various parts of the empire present considerable differences in their administration, and some of them are governed according to the ancient privileges which they have preserved, or to the constitution granted to them at the period of their union with the empire. Thus the Cossacks of the Don, and of the Black Sea, form military republics, under a first magistrate, named their *hetman*, who forms the organ of communication with the Emperor; but, by various gradual changes, their privileges have been at last almost annihilated, and their territories reduced to the condition of ordinary provinces. Finland also forms a grand-duchy, with a constitution entirely different from that of the other parts of the empire. Livonia, Esthonia, and Courland, also enjoy considerable privileges; but still, these privileges are held at the will of a despot, who may abrogate them whenever he pleases. Poland now forms an integral part of the empire; though it has a separate administration and particular laws, which cannot be all at once superseded by those of Russia. The present Emperor, Nikolai or Nicholas, is the grand-son of Charles Peter Ulric, Duke of Holstein-Gottorp, who was the son of Anne, one of the daughters of Peter the Great, and who, having been adopted as her heir by his aunt, the Empress Elizabeth, succeeded her by the name of Peter III. in 1763. He was deposed soon after by his wife, the celebrated Empress Catherine the Second, who reigned till 1796, when she was succeeded by her son Paul, the father of Nikolai, and of the late Emperor Alexander. The male line of the House of Romanow, raised to the throne of the Czars in 1613, became extinct in 1727, by the death of Peter II., the son of Peter the Great.

FINANCES. — The revenues of the empire arise chiefly from a capitation tax of two roubles on each peasant, and five on each burgher; a tax of $1\frac{3}{4}$ per cent. on the capital of merchants; rents of the crown-lands of peasants, customs, stamps, patents, &c.; the monopoly of spirituous liquors and salt; mines; purchase of exemp-

tion from military service; fines on smugglers and other delinquents; the crown fisheries, mills, manufactures, baths; the profits of the mint, and the post-office; and the tribute in furs paid by the nomadic races. The total income for 1836 amounted to about £14,200,000 sterling; allowance, however, must be made for large sums never carried to the general account, but either appropriated to local purposes, or paid in kind by various sections of the population. This is the case with the rent of the fisheries of the Ural, which either serves as pay for specific services, or is assigned in perpetuity to certain classes of the community, so that it never appears among the public receipts. In some districts also the capitation tax is commuted for labour or military service. To the sum above stated may also be added about £262,000 as the produce of the gold and platina mines. On the 1st January, 1834, the imperial debt amounted to 933,871,673 paper roubles, or £40,356,885 sterling; but a large sum is annually appropriated to its extinction. There is little gold in circulation; the only silver coin is the rouble (3s. 1½d.), and its aliquot parts of halves, quarters, tenths, and twentieths. There is a large copper circulation of kopeeks, one hundred of which are equal to a paper rouble (10s. $0\frac{3}{4}$); indeed, the only true metallic currency may be said to be the copper.

ARMY AND NAVY. — The ordinary establishment of the army consists of—1. The Guards, 8 regiments of infantry, 8 of cavalry, 3 squadrons of Cossaeks and Tartars, artillery and artificers — 27,200; 2. Infantry of the line in the field, 127 regiments; in garrison, 36 battalions — 381,800; 3. Regular Cavalry, 68 regiments, with 38 regiments of Cossaeks, 87,000; and Irregular Cavalry, 51,000 — together, 138,000; 4. Artillery, 44,300; 5. Extra corps, 27,000; 6. Officers of various ranks, 20,000, —total, 640,300. To these must be added the reserve in the military colonies, 80,000, and Polish troops, 10,000 — making a grand total of 730,300 men, with 90,048 horses belonging to the regular cavalry; 15,732 to the artillery; and 38,586 to the irregular troops. The army is distributed into eight grand divisions, namely, 1. The Guards; 2. The army of the South; 3. The army of the West; 4. The army of Lithuania and Poland; 5. The corps of the Caucasus; 6. The Finland corps; 7. The regiments of the military colonies; and 8, The army of reserve.* The expense of this vast force is comparatively small; the articles for their equipment, provisioning, and arming, being of the cheapest and coarsest kind, and the pay of both officers and men being very low. But the Russian currency being in paper roubles, which bring only one-fourth of their nominal value, as soon as the troops cross their own frontier, their right to receive their pay in silver roubles is acknowledged by the Emperor; so that the mere pay of an army on foreign service is four times as great as when they are at home, besides all other expenses.

The number of the army is kept up by conscription. When new levies are wanted, orders are issued to the head men of villages, each of which is required to furnish a certain number, according to the amount of its population. The Russian soldier is docile, submissive, and brave; like all slaves, he is pliant, subservient, and cunning; and, like all natives of the north, he is hardy, patient, and enduring. The moral force of the army consists in a certain undefined ferocity, which such men as Suvaroff can alone fully develope. The cavalry colonies in the south of Russia have attracted much attention; but they are nothing more than permanent cantonments of regiments of cavalry in districts belonging to the crown, quartered upon the inhabitants, and receiving from them regulated rations. They are, however, recruited from the youth of the villages where they are quartered; but, during the whole period of their actual service, their duties are purely military. The force of these cavalry colonies is great, and consists of five divisions, each composed of four regiments, of about 1200 effective men each, besides depot and reserve squadrons, and the regimental tradesmen and staff. Three of the divisions are cuirassiers, and two are lancers.

The Russian navy may be said to be the creation of the present Czar Nicholas. He maintains two large fleets in the Gulf of Finland and the Black Sea; but the exact amount of their force and their available resources are, and for several years have been, a subject of endless dispute amongst naval men and politicians. It is at least certain, that the Czar spares neither cost nor trouble on his favourite object; but, on the other hand, the ships are manned by landsmen, who have no naval experience

* *United Service Journal*, xiv. 245.—Mr. Bremner, however, says that "It is impossible to learn anything certain respecting the army. It is impossible even to ascertain the number of the officers, there being neither army list nor guide of any other kind published by the Government;" and the Marquis of Londonderry says that "It is very difficult to get at exact information, as on this head the greatest secrecy prevails."

beyond what they derive from a short summer cruize in their narrow seas, or from harbour practice; and, owing to the gross corruption and peculation that pervade every department of the body politic in Russia, the vessels are so insufficiently built as to be fit for service only a very few years, and some of them even, it is alleged, are almost useless before they are fitted out for their first voyage,—every part of the material being supplied of the worst quality, at the highest price. To every ship of the line there is assigned a regiment of 1100 men, who suffice not only for the larger ship, but also for the smaller vessels attached to it. The crews of the Baltic fleet amounted, in 1837, to not less than 30,800 men; and those of the fleet in the Black Sea, to 19,800, or, altogether, 50,600. The officers are supplied from the two Cadet Colleges, and sent to sea in the fleet every summer. The ships generally become unserviceable in nine or ten years.

PRODUCTIVE INDUSTRY.—The agriculture of Russia was, till recently, of the rudest kind; but within the last few years considerable progress has been made in improving it, partly through the exertions of Government, and partly through those of the landed proprietors. The annual production of grain, on an average of five years, has been calculated to amount to 134,818,920 English quarters, of which three-ninths were required for seed, leaving nearly ninety millions of quarters for consumption and exportation. For the encouragement of agriculture the following societies have been established:—The Imperial Free Economical Society at St. Petersburg, in 1765; The Imperial Agricultural Society of Moscow, in 1819; The Agricultural Society of South Russia, in 1828; The Livonian Economical Society, in 1796; The Estbonian Agricultural Society; The Polytechnic Society in Kharkov; The Economical Society of Abo, in Finland; The White-Russian Free Economical Society, established in 1824 at Vitepsk.—(*Bulgarin*, 258, *&c.*) Great progress has also been made in manufacturing industry. In 1815 the total number of manufacturing establishments was estimated at 3250, employing 150,000 workmen; in 1836, the number was 6045, with 279,673 workmen. Formerly Russia imported only manufactured goods, but she now imports large quantities of raw material for the use of her manufactures, and strictly prohibits the importation of every thing that can compete with them. The distillation of corn brandy, or whisky, is still the most extensive and lucrative branch of industry, and produces to the Government annually an excise-duty of ninety millions of roubles; the use of it is universal among the peasantry; who also consume to a great extent a kind of beer called braga. It is but of late that the Russians have applied themselves to the working of mines; but considerable quantities of metal are now produced. During the ten years, 1824-34, the average quantity of gold produced from the Ural mines and coined, amounted to 10,687 lbs., and of platina, 2557 lbs.; but in 1836, the gold mines did not yield more than 4580 lbs.; and those of platina only 17⅞ lbs. The quantity of gold, however, obtained in the same year, from private mines, was 4860 lbs., and of platina 4248 lbs. The silver mines yield annually about 43,200 lbs., besides 1,440,000 lbs. of lead. The aggregate amount of copper from the Government and private mines is 7,596,000 lbs. The principal iron mines are situate in Finland. The smelting of the ore is performed by eight different furnaces; and nearly the whole of the iron produced is distributed among the forges in different parts of the country. Finland likewise produces copper. Iron of the best quality is also found at Tula, which is a great seat of the iron manufactures of Russia. The salt lakes in the Steppes produce immense quantities of salt, to the amount, it is said, of 324,580 tons. Alum is produced to the yearly amount of 576,000 lbs.

The fisheries of Russia are not the least important branch of industry. A prodigious quantity of fish is supplied by the lakes and rivers; and of these the Volga and the Oka are particularly productive. The principal kinds of fish are sturgeon, hieluga, and salmon, besides carp, pike, and trout. The Black Sea likewise produces lampreys and mackerel; and a kind of herring is found both there and in the Sea of Azov. Caviare, the consumption of which is very great in Russia, is made from the roes of the sterlet, a variety of the sturgeon, and from those of the bieluga. A single sterlet yields from ten to thirty pounds weight, and from a single hieluga, there may be taken sometimes as much as 120 lbs. The best caviare is prepared by the Cossacks of the Ural. The net annual value of the Russian fisheries amounts to more than ten millions of roubles. The fisheries of the Caspian, and its tributary rivers are by far the most important. They generally belong to the villages and cities in the Government of Astrakhan, but pay a yearly impost to Government. Those situated in the territory of the city of Astrakhan belong to Prince Kourakin, but he has gratuitously ceded to the citizens the right of fishing. The most extensive fishery, that of the Iemba, extending along the shores of the Caspian from the mouth of the Ural to the gulf named Mertvoi-Kultuk, a distance of 345 miles, has also been free since 1803. At the month of the Terek there is another fishery, deriving its name from the island of Tchetchen, just opposite, on which the fishermen reside, and salt and smoke the fish. The Russians even are allowed to monopolize the fishery at the mouths of the rivers of Mazenderan. The principal objects of their attention are four species of the sturgeon, namely the common sturgeon (accipenser sturio), the sevriouga (accipenser stellatus), the bieluga (accipenser huso), and the sterlet (accipenser ruthemus.) The mode in which the fish are taken is extremely rude and inartificial; and when taken are placed on rafts where they are gutted, and the roes, the back-bone, and the sounds or swimming bladders carefully separated. The fish themselves are then carried to huts where they are salted; the roes are placed in a reservoir, to separate the fatty matter, after which, being pickled and barrelled, they constitute caviare. Sturgeon being a cartilaginous fish, have scarcely any earthy matter in their bones, which are in fact rather a highly elastic flexible gristle; their spines therefore being rich in gelatine, are, together with the ligaments and capsules, saved, and constitute what is termed fish cartilage. Lastly, the sounds are dried in the sun and become isinglass. Seals are also found in the Caspian, and from 60,000 to 100,000 of them are taken annually, for the sake of their skins and blubber. The fisheries take place every year in the following order—first, the spring fishery, at the breaking up of the ice, when the greatest quantity of caviare is made; second, the summer fishery, when, from the lowness of the rivers, the fish are returning to the sea; third, the autumn fishery, from September to November, when the sturgeon, of all the species, are ascending the rivers, and seeking deep pools in which to spend the winter. Many of them, however, still remain behind, so that they are fished for in winter also, by means of nets sunk through holes in the ice. During this season the fishermen proceed several versts from shore on the ice; and it frequently happens that during their fishing an impetuous wind suddenly blows off shore, and drives the ice into the deep sea, where they are inevitably lost, unless the wind change and drive them back again to land.

The commerce of Russia is very considerable, and internal traffic is annually increasing. Nineteen fairs have been established in the principal towns, and thirteen in the smaller ones. A great number of bazaars have likewise been erected. The great centre of the inland trade is at Nishnei-Novgorod, the annual fair at which place is perhaps the largest in the world, and is attended by traders from all parts of European and Asiatic Russia, from Khiva, Bokhara, and Persia, who bring with

them the produce of their own country, and carry home in exchange the productions of Western Europe and America. The fair lasts during August and September, and is generally visited by about 150,000 strangers. The annual value of the goods actually sold, in 1836, amounted to 117,743,300 roubles. The value of merchandize sold at all the fairs in 1836 amounted to £10,500,000 sterling. With respect to the maritime commerce of Russia, the value of the merchandize imported in 1835 amounted to £8,563,461, and exported, to £8,550,459. The imports consisted of coffee, spices, wines and liquors, fish, salt, tobacco, fruit, raw cotton, cotton twist, indigo, cochineal, madder, logwood, and other dyewoods, drugs, olive-oil, hardware, lead, raw sugar, silk, cotton, silk, and worsted goods, cloths, and precious stones; but the importation of every sort of manufactured or other produce that can compete with the manufactures or natural productions of Russia is expressly prohibited. The exports consisted of wheat, rye, barley, oats, wax, raw hides, tanned leather, flax, hemp, timber, potash, hemp oil, linseed oil, copper, iron, tallow, linseed, wool, bristles, cordage, sail-cloth, ravens, ducks, flems, cattle, furs, hair, skins, &c. The largest articles of export were tallow, to the value of £1,639,122; hemp, £822,796; wheat, £521,100; flax, £825,843; linseed, £815,999. The principal seats of the maritime commerce are—St. Petersburg, Cronstadt, Riga, and Revel, on the Baltic Sea; Arkhangel and Onega, on the White Sea; Odessa, on the Black Sea. St. Petersburg alone engrosses about one-half of the whole foreign commerce of the empire.

INTERNAL COMMUNICATION.— The roads throughout Russia are, in general, very bad; in some places they are formed with trunks of trees laid across, and in others they are mere tracks; but of late some good roads have been formed, and particularly the great road from St. Petersburg to Moscow is said to be without exception the finest in the world. It has been macadamized throughout, and lined with trees; and at the end of every seven or eight versts there is a station for a corporal and a party of soldiers, whose duty it is to keep it in repair.—(*Bremner.*) A magnificent road likewise leads from the capital to Czarskocelo, with marble pyramids to mark the distance in versts, and lighted by nearly 3000 lanterns. A railroad has also been formed between St. Petersburg and Czarskocelo; and it is the Emperor's intention to form another between St. Petersburg and Moscow, with branches perhaps to Odessa, and other places. But one of the most striking features of the country is the great extent of both natural and artificial communication by water. All the great rivers, lakes, and seas, have been connected by canals; so that there is uninterrupted communication from the Baltic to the Black Sea, the White Sea, and the Caspian. The principal of these canals are:—

The *Canal of Vishnei-Volotchk* connects, by means of the Zna, an affluent of the Tvertsa, and of the Chlinia, an affluent of the Msta, which flows into Lake Ilmen, the Volga to the Volkhov, an affluent of Lake Ladoga. It is three miles long, and has three sluices. It was first opened in 1711, but only completely finished in 1818.

The *Canal of Tikhvine*, projected by Peter I., but begun and finished by Alexander, connects the Tikhvinka, an affluent of the Sias, which runs into Lake Ladoga, with the Volga, by means of several rivers, as the Somnia, the Gourounia, the Ichagoda, and the Molaga.

The *Maria Canal*, projected by Peter I., but begun only in 1799, and finished in 1808, connects two rivers rendered navigable in the upper part of their course, viz. the Kovja, an affluent of the Bielo Lake, and the Vytegra, an affluent of Lake Onega. It is four miles long. Two important accessary canals are connected with this main branch; one of them nearly 40 miles long, between the Cheksna and the Kovja; and the other, 26 miles long, called the *Svir Canal*, between the Svir, an affluent of Lake Ladoga, and the Vyterga, an affluent of Lake Onega.

The *Canal of Ladoga*, begun in 1718, and opened in 1731, runs along the south side of the Lake of Ladoga, and connects the Volkhov with new Ladoga and the Neva. It is the most frequented of all the canals; and it is said that 25,000 vessels of every kind annually pass through its principal sluice at Schlusselburg.

The *Canal of Novgorod*, or of *Sievres*, about 5 miles long, connects directly, in the environs of Novgorod, the Msta and the Volkhov, in order to avoid the dangerous navigation of Lake Ilmen.

The *Canal of Sias* connects the river of that name with the Volkhov, where the latter flows out of Lake Ilmen.

The *Canal of Kubensk* connects the Cheksna, an affluent of the Volga, near Kirilov, in the government of Novgorod, with the Lake of Kubensk, which discharges its waters into the Sukhona or Sukhonia, one of the branches of the Northern Dvina, and thereby establishes a communication between the Caspian Sea and the White Sea. By means of the Maria Canal it also communicates with the Baltic.

The *Northern Canal*, or the *Severo-Iekaterinski*, begun by Catherine I., but only finished in 1820, connects the Keltma, an affluent of the Vitchegda (an affluent of the Dvina), with the Dguritch, which belongs to the basin of the Kama, an affluent of the Volga.

The *Canal of Lepel*, or of the *Berezina*, finished in 1801, connects the Duna with the Dneiper, and is about 5 miles long.

The *Canal of Oginski*, begun in 1765, finished in 1787, and rendered completely navigable in 1801, connects the Iasialda, an affluent of the Priepecz, with the Szczara or Chtchara, an affluent of the Niemen, 36 miles long.

The *Royal Canal*, formed in 1775, at the expense of the Polish Government, connects the Pina, an affluent of the Priepecz, with the Muchaviec, an affluent of the Bug.

The *Canal of Ivanov*, in the government of Tula, connects the Chata, an affluent of the Upa, belonging to the basin of the Volga, by means of the Oka, with the upper part of the course of the Don.

The *Canal of Fellin*, in Livonia, connects the Embach, an affluent of Lake Peïpous. Another canal, that of *Verro*, connects the Lake of Pskov, a portion of the Peïpous, with the Aa, which runs into the Gulf of Riga.

The *Canal of Velikia-Luki* connects the Duna with the Neva, by means of the Lovat, Lake Ilmen, Volkhov, and the Lake of Ladoga.

In order to enable the productions of Russia and Poland to reach the Baltic, without paying Prussian customs, canals have been projected to connect the Vistula with the Niemen and the Duna. The *Canal of Kurland* is one of the principal branches; but none of them are yet finished.

One of the finest canals in the empire is that which has been formed on the south side of St. Petersburg, with the double intention of preventing any approach to the city, except through the barriers, and of affording a commodious and safe harbour for the numerous barges which arrive loaded with the inland produce.

ADMINISTRATIVE DIVISIONS. — Russia in Europe is divided into 47 eparchies or governments, exclusive of the territory of the Don Cossacks, which forms a sort of military republic; the Grand Duchy of Finland, which has a separate administration, and the kingdom of Poland. The Russian Government make no distinction between Europe and Asia, so that some of the governments are in both. Finland is divided into seven governments, and Poland into eight palatinates. The other

governments are subdivided into circles. The following table contains the names of the governments, their area and population in 1836.

Governments.	*Area in Square Miles.*	*Population.*	*Governments.*	*Area in Square Miles.*	*Population.*
I. BALTIC PROVINCES.			Kherson,	23,356	607,949
St. Petersburg,	15,087	509,004	Taurida,	43,348	543,020
Esthonia,	6,694	280,612	Bessarabia,	16,873	503,666
Livonia,	17,653	740,089	Don Cossacks,	108,120	527,472
Kûrland or Courland,	9,094	503,010	V. WEST RUSSIA.		
Finland,	136,127	1,372,122	Vilna,	24,693	1,315,780
II. GREAT RUSSIA.			Grodno,	12,112	761,880
Moscow,	11,688	1,240,283	Vitepsk,	16,533	702,226
Smolensk,	20,272	1,031,466	Mohilev,	17,510	802,100
Pskov or Pleskow,	22,206	693,727	Minsk,	41,183	955,714
Tver,	21,718	1,297,947	Volhynia,	22,801	1,314,117
Novgorod,	43,988	735,170	Podolia,	12,240	1,548,155
Olonetz,	50,022	236,070	Bialystock,	3,443	261,014
Arkhangel,	323,255	240,896	VI. KINGDOM OF KASAN.		
Vologda,	146,200	732,223	Kazan,	23,460	1,309,432
Iaroslav,	17,149	930,180	Viatka,	53,061	1,504,097
Kostroma,	30,557	972,102	Perm,	57,821	1,488,800
Vladimir,	17,658	1,127,471	Simbirsk,	24,246	1,198,576
N. Novgovorod,	18,657	1,076,363	Penza,	14,322	988,179
Tambov,	23,480	1,580,259	VII. KM. OF ASTRAKHAN.		
Riasan,	15,024	1,211,223	Astrakhan,	86,530	103,288
Tula,	11,211	1,074,687	Saratov,	73,801	1,543,477
Kaluga,	11,496	917,537	Orenburg,	138,809	1,595,843
Orel,	16,044	1,342,912	VIII. KM. OF POLAND.		
Kursk,	16,873	1,503,022	Cracow,	4,492	489,000
Voroneje,	28,773	1,492,223	Sandomir,	5,998	384,000
III. LITTLE RUSSIA.			Kalisch,	6,825	740,000
Kief or Kiev,	16,957	1,459,782	Lublin,	6,742	484,000
Tchernigov,	19,085	1,312,592	Plock,	6,162	458,000
Poltava,	22,568	1,621,583	Masovia,	8,948	770,000
Kharkov,	17,956	1,171,456	Podlachia,	4,845	350,000
IV. SOUTH OR NEW RUSSIA.			Augustova,	6,842	478,000
Iekaterinoslav,	25,203	774,768		2,045,376*	52,943,847

TOPOGRAPHY. — Our narrow limits render it impossible for us to notice in detail the numerous cities and towns whose names occur in the map of so large a country. We shall therefore confine ourselves to giving a list of the principal towns, with their population, arranged according to the governments in which they are situate, with short notices of the more important places.

1. *St. Petersburg.* — ST. PETERSBURG, 448,000; Cronstadt, 40,000; Narva, 5000; Czarskoe-selo, 11,000; Schlusselburg, 7600; Novaia-Ladoga, 1648; Gatchina, 1603; Paulovsky, 1000; Oranienbaum, 1200; Jamburg, 677; Sisterbek.

ST. PETERSBURG, the capital of the empire, is situate on the banks of the Neva, where it enters the eastern extremity of the Gulf of Finland. The Neva, flowing in one great stream from the Lake of Ladoga, here divides into two branches, named Neva and Nevka; each of which again divides into two, named the Big and the Little Neva, and the Big and the Little Nevka; and these, before reaching the sea, still further subdivide, forming a number of low marshy islands; besides which the Admiralty Quarter is intersected by several large canals, forming so many more subdivisions. The principal part of the city, named the Admiralty Quarter, is situate on the mainland, along the south side, or left bank of the Neva; another large portion occupies the eastern half of Vassilii Ostrof (Basil's Island), between the Big and the Little Neva; a third portion, containing the Citadel and Old St. Petersburg, the original foundation of Peter the Great, occupies a large island between the Neva, the Little Neva, and the Nevka; and a fourth portion, the Viburg quarter, extends along the north bank of the Neva and Nevka. The communication between these is maintained in summer by means of three large floating bridges, and in winter by the solid frozen surface of the Neva. The bank of the river is lined with stupendous granite quays, and the principal public buildings and ornaments of the city are arranged along the Neva, mostly in the Admiralty quarter. The streets are in general wide and very regular, running in straight lines, but intersecting each other at different angles, except in the Vassilii Ostrof, and some other places where they cross at right angles, though not arranged in exact or equal squares. Most of the streets are from 60 to 120 feet wide; the length is various; there are six or eight about 6000 feet long; two or three still longer; the principal street, named Nevski Prospekt, is 14,350 feet long, and the Great Perspective in the Vassilii Ostrof, 10,220 feet. Many of the houses are built of brick, stuccoed or plastered; but most of them are built of wood. A few of the streets and some of the squares have been macadamized; most of them are paved with small stones; but footpaths formed of granite flags have been recently introduced into almost every street, and no new streets can be formed without them. The city is divided into twelve districts, four of which are in the Admiralty Quarter, and each of these is subdivided into sections, the names and numbers of which are marked in large letters at the corner of every street; the houses are also regularly numbered; and a complete drainage is effected by sewers, arched over with brick, and having a gentle inclination to the river.

The principal public buildings are, — The Admiralty, nearly in the centre of the city, on the left bank of the Neva, a very extensive and handsome building, surmounted in the middle by a richly gilt

* These numbers are taken from the Gotha Almanack for 1839, only converting the German miles into English.

spire, and enclosing a dockyard between it and the river; the Imperial or Winter Palace, a large and imposing pile; the palaces called the Hermitage, the Marble Palace, the barracks of the guards Preobrajenskoi, and others, which form altogether an uninterrupted line of splendid edifices, upwards of a mile in length, and unequalled in any other city in Europe. Opposite this splendid range is the Citadel, with its low bastions of granite encircled by the Neva, and rendered conspicuous by the tall, slender, and richly gilt spire of its church of St. Peter and St. Paul, which contains the mausoleum of the Imperial Family. Looking to the east from the citadel, the Neva is seen spreading into a wide expanse like a bay, on the distant shores of which several other handsome buildings are discerned, particularly the great naval and military hospitals; while to the westward, the eye rests upon the magnificent portico of the Exchange, between two colossal rostral columns, at the eastern point of Vassilii Ostrof; and beyond them, the palace and observatory of the Academy of Sciences. A colossal equestrian statue of Peter the Great, upon a massive granite pedestal, erected by Catharine II.; the Senate House, the War Office, and St. Isaak's Church, are all situate in the area to the west of the Admiralty. The church has been building for forty years, and is expected to be completed in 1842, when it may challenge the world to produce its equal for external character and sumptuousness of material. It is of a square form, with an octostyle portico on each of its four faces; and is surmounted by a large dome in the centre, 240 Russian (nearly 400 English) feet high, and four smaller ones at the corners. The whole outside is built of marble, granite, and bronze; each of the columns consists of a single granite stone 55 feet high, and the dome is to be gilt with ducat gold. Another fine church, that of our Lady of Kasan, has recently been erected nearly upon the model of St. Paul's, London, in the form of a cross, with a central dome; but having its principal entrance at the north end of the transept, which communicates with the street by a semicircular colonnade, in imitation of the piazza San Pietro at Rome. The Taurida Palace, at the east side of the city; the palace of the Grand Duke Michael, a stately new building; the hotel of the Staff, in front of which is the fine granite monolith column (12 feet in diameter, and 84 high), erected to the memory of the Emperor Alexander; and the cottage of Peter the Great, in the citadel, may also be mentioned as worthy of notice.

St. Petersburg was founded by the Czar, Peter the Great, in 1703, for the purpose of securing a maritime communication between his empire and the rest of Europe; and the city now engrosses the half of the foreign commerce of Russia. It was dedicated by its founder to the Apostle St. Peter, from whom it takes its name. The soil on which it is founded may be said to be marshy, and most of the houses are built on piles. No inconvenience, however, seems to arise from this circumstance, with respect to health or comfort. The surrounding country is flat; the soil is sandy; vegetation is not very luxuriant, except on the smaller islands, and the surface does not present that beautiful variety of ground which forms the charm of the situation of some other cities. But, with all these disadvantages, industry and art have produced, in less than a century and a half, results which in other parts of Europe would have been the work of many successive centuries. The city occupies an area of more than 18 miles in circumference. The population, in 1838, amounted to 469,720, of whom 333,669 were males, and only 136,051 females; a disproportion accounted for by the circumstance, that men brought or coming to the city in search of employment generally leave their families in the interior. The number of Greek clergy was 1867; nobles, 40,588; merchants, both native and foreign, 10,004; citizens of honour, 163; and of various professions, 23,888; citizens, mechanics of various professions, 95,714; military, 70,929; servants of the court, partly serfs and partly freedmen, and individuals privileged with passports of service, 67,001; peasants, in part belonging to the Crown and partly to individuals, 126,313. It contained 10 palaces, 8661 buildings and tenements, of which 3243 of stone or brick, and 5418 of wood. The town markets were supplied with 105,816 oxen, 5610 cows, and 30,965 sheep. The military garrison consists of 60,000 men.

Twenty miles west of the city, on the shore of the Gulf of Finland, is situate the large imperial palace of *Peterhof*, a favourite residence of Peter the Great; 15 miles south is the splendid palace of *Czarskocelo*, the Versailles of Russia, round which has grown up, as if by magic, a large town of 10,000 inhabitants, with colleges and public buildings; and 15 miles further to the south-west, is the palace of *Gatchina*, the favourite residence of the Emperor Paul; and a town of the same name, with a fine china-work and large hospitals. There are other palaces of less importance at *Paulorsky*, *Staelna*, *Tchesme*, and *Oranienbaum* (orange-trees;) the last of which is situate on the shore of the gulf, to the westward of Peterhof, and is noted, as its name implies, for its superb orangery. *Kronstadt*, or *Cronstadt*, a strong fortress and naval arsenal, and the port of St. Petersburg, is situate at the east end of a large sandy island in the gulf, about 16 miles west from the mouth of the Neva. It is so fortified by every device which skill can suggest, that it is considered to be impregnable; is the station of the Russian Baltic fleet; and completely commands the passage to St. Petersburg, the intervening sea being so shallow that large vessels cannot approach the city. Population, between 30,000 and 40,000.

2. *Esthonia.*—Revel, 14,000; Vesenberg, 2624: Weissenstein, 2716; Hapsal, 1452; Baltisch Port, 497. *Revel* is a fortified town, with a fine harbour, and considerable trade.

3. *Livonia.*—Riga, 50,000; Dorpat, 8568; Pernau, 4450; Venden, 1511; Arensburg, 1459; Valk 570; Volmar, 621. *Riga* is a large, antique, fortified town, with old and bad houses, and exhibits no striking or remarkable feature. Its population is chiefly commercial, and exports great quantities of hemp, corn, and timber, brought from the interior by the Dvina, which forms its harbour. Dorpat is the seat of a celebrated university, founded in 1630, by Gustavus-Adolfus, King of Sweden.

4. *Kurland.*—Mittau, 14,000; Libau, 6877; Goldingen, 3503; Vindau, 1400; Bauske, 1000; Jacobstadt, 2077; Polangen, 1000. *Mittau*, is a literary town, possesses a celebrated gymnasium, a library, observatory, and museum of natural history, and is the seat of the Courlandisch Society, which has published some learned memoirs.

5. *Finland.*—Helsingfors, 10,000; Abo, 12,000; Uleaborg, 5000; Brahestadt, 1100; Tornea, 700; Viburg, 3000; Frederikshamn, 2200; Wilmanstrand, 2000; Kexholm, 500; Tavastehuns, 1600; Biorneberg, 4500; Oasa, 3300; Gamla-Karleby, 1900; Jakobstad, 1400; Sveaborg, 3000. *Helsingfors* is a flourishing commercial town, with a fine harbour on the Gulf of Finland, and is the seat of a university transferred from Abo. It has been recently much improved and fortified by the Russian Government; and near it is the celebrated fortress of *Sveaborg*, consisting of seven fortified islands, which defend a magnificent harbour and naval arsenal. The fortress is capable of lodging a garrison of 12,000 men; is so completely fortified as to be deemed impregnable, and is called by the Russians the Gibraltar of the Baltic. *Abo*, the ancient capital of Finland, was almost entirely destroyed by fire in 1825, and is very slowly recovering. *Tornea*, a very small town at the head of the Gulf of Bothnia; from a mountain in the neighbourhood, the sun is seen all night at midsummer, and on that account, the place is visited by many travellers. *Vasa* and *Uleaborg*, are small but well-built towns, with considerable trade, on the east coast of the Gulf of Bothnia. *Frederikshamn* and *Rotschenahm*, are two fortified places on the northern shore of the Gulf of Finland; the latter is the station of part of the Baltic fleet.

6. *Moscow.*—Moscow, 350,000; Kolomna, 10,000; Serpoukhov, 6500; Versia, 5000; Dmitrov, 4000; Bronnitsi, 2000, Mojaisk, 2000; and Borodino, ——. Moscow (MOSKVA), the metropolis of the

empire, though not the seat of government, is a large city, regularly built on the banks of the Moskva, 390 miles S.E. of St. Petersburg, in 55° 45′ north latitude, and 37° 33′ east longitude. It was almost entirely destroyed by fire in 1812; but, since that time, it has not only been rebuilt, but greatly enlarged, improved, and embellished. In its general appearance it more resembles an Asiatic than a European city; it is chiefly built of wood, and palaces and huts stand mixed together in striking contrast. It is the head-quarters and winter resort of the old Russian nobles, who generally dislike the restraints and the modern fashions of the Court of St. Petersburg; it is also emphatically the city of churches, containing more than 600, many of which have five or six domes, besides steeples, spires, and crosses, gilded and joined together with golden chains. Its convents, too, are almost innumerable, rivalling the churches in size and splendour. In the middle of the city stands the Kremlin, or citadel, on a height, the base of which is circled with white Tartar walls, and washed on one side by the river. It is nearly triangular in form, and two miles in circumference. Within, there are no regular streets; but it contains three open places or squares, and abundance of room for carriages and foot-passengers. It is crowded with palaces, churches, monasteries, arsenals, museums, and other public buildings, erected without any attempt at regularity of design, and exhibiting every variety of taste, and every order of architecture, Grecian, Gothic, Italian, Tartar, and Hindoo, rude, fanciful, grotesque, gorgeous, magnificent, and beautiful; overtopped by upwards of thirty gilt cupolas. The most splendid of the churches is the cathedral of the Assumption, founded in 1325, and rebuilt in 1472, loaded with gorgeous and extravagant ornaments; in this church the Emperors are invested with the ancient crown of the Czars. Above every other object in the Kremlin rises the tower of Ivan Veliki (John the Great), about 270 feet high, and containing 33 bells, the smallest of which weighs 7000, and the largest more than 124,000 lbs. English; and on festival days the whole are all tolled together. The great bell of Moscow, weighing 443,772 lbs., cast in the reign of the Empress Anne, and which lay for a century sunk in a dark pit, has been recently raised and set upon a pedestal. Though cracked and useless, it is, nevertheless, an object of great veneration with the Russians. Moscow possesses a great number of scientific and literary establishments, and is the centre of an immense inland commerce. The population in 1838 amounted to 348,562; of whom 214,778 were males, and 153,784 females. *Mojaisk* and *Borodino*, 60 miles west of Moscow, were the scene of a very obstinately contested and sanguinary battle between the French and the Russians in 1812.

7. *Smolensk.*—Smolensk, 11,000; Viasma, 8000; Dorogobouj, 4000; Belvi, 3000; Roslavie, 3000; Poretchie, 3000; Krasnoi, 1240. *Smolensk* is an ancient fortified city on the Dnieper, 230 miles W. by S. of Moscow, and 360 south of St. Petersburg. It was burned by the Russians in 1812, and has since been rebuilt of wood. Both Smolensk and Viasma enjoy considerable trade.

8. *Pskov.*—Pskov (German, *Pleskov*), 9000; Toropecz, 5000; Veliki Lûki, 4000; Porkhov, 3000; Izborsk, 300; Optschka, 1895.

9 *Tver.*—Tver (Twer), 22,000; Torjok, 12,000; Riev, 10,000; Ostachkov, 8000; Vishni-Volotchk, 6000; Kaliazine, 5000; Kachin, 5000. *Tver*, an archiepiscopal city, is situate on the right bank of the Volga, at the confluence of the Tvertza and the Tmaka. It was almost entirely rebuilt by Catharine II., and is most advantageously situate for carrying on an extensive trade. It has a magnificent imperial palace, a gothic cathedral, a monument of Catharine II., several fine squares, straight streets, and superb quays along the Volga. It possesses an ecclesiastical seminary with 11 professors, a gymnasium, and a college of nobles.

10. *Novgorod.*—Novgorod-Veliki (Big Novgorod, or Novgorod the Great), 8000; Staraia-Russa, 9000; Borovitchi, 5000; Tikhvine, 4000; Valdai, 4000; Ustiujna, 3000; Belozersk, 3000; Kirilov, 2000. Three centuries ago, Novgorod the Great covered an area 42 miles in circumference, and had more than 400,000 inhabitants. Some parts of it are still in good condition, with wide and well-paved streets; but the larger portion has fallen to ruin, and its population has dwindled to little more than 7000. It is situated about 130 miles from St. Petersburg, on a fine navigable river, the Volkhova, over which there is a new and handsome bridge. *Staraia-Russa* is noted for its tanneries and salt-works.

11. *Olonetz.*—Petrozavodsk, 5000; Kargopole, 2000; Vytegra, 1000; Olonetz, 1000. *Petrozavodsk* (Peter's foundry), situate on the west side of the Lake of Onega, is noted for its large and important iron-works, its cannon-foundry, and gunpowder manufactory. *Olonetz* is a bishop's see, and has some mines of iron and copper in its district.

12. *Arkhangel.*—Arkhangel (or the City of St. Michael the Archangel), 19,000; Mezen, 1000; Onega, 1000; Kolmogory, 1000; Keme, 1000; Kola, 700. *Arkhangel* is situate on the northern bank of the Dvina, near its mouth in the White Sea, is an archiepiscopal city, and was the only outlet for the productions of Russia before the founding of St. Petersburg. It still enjoys a great trade in exporting the productions of the northern provinces, but its harbour is shut up by the ice from September to July. The town is mostly built of wood, but its great market place is built of stone. It has an ecclesiastical seminary, with nine professors; a gymnasium, and a school of navigation.

13. *Vologda.*—Vologda, 13,000; Veliki-Ustiug, 7000; Totma, 3000; Ust-Sysolsk, 2000; Griazovetz, 2000; Solvytchegodsk, 1000; Nikolsk, 1000; Iarensk, 1000. *Vologda* is a flourishing manufacturing town, and the centre of the trade of the north of Russia with Europe and Siberia, an advantage which it owes to its position midway between St. Petersburg, Arkhangel, Moscow, and Kasan, and to the canals and navigable rivers with which it is connected. It is the seat of a bishop, and of one of the principal ecclesiastical seminaries, which has fourteen professors, and is attended by several hundred students. *Totma* has an active commerce with Siberia, saltworks, and the convent of Spaso-Umorine, where numerous pilgrims visit the body of St. Theodosius. *Veliki-Ustiug* is also a flourishing commercial town.

14. *Iaroslav.*—Iaroslav, 28,000; Uglitch, 8000; Romanov-Borisoglebsky, 6000; Rostov, 6000; Mologa, 3000; Rybinsk, 3000; Pochikhonie, 3000; Lubime, 2000. *Iaroslav*, a well-built archiepiscopal city, with many elegant houses, situate on a plateau at the confluence of the Kotorotsk with the Volga, is one of the principal manufacturing towns of Russia, and is particularly noted for tahle-linen, paper, and silk. It possesses a school of science, founded, in 1812, by Paul Gregoriwitch Demidov, a rich library, an ecclesiastical seminary, with 12 Professors and 1200 students, and 43 or 44 churches.

15. *Kostroma.*—Kostroma, 12,000; Galitch, 5000; Kinechma, 3000; Makarief, 2000; Soligalitch, 2000. *Kostroma* is an episcopal city, with numerous manufactures of linen and copper, salt, &c., and a flourishing trade. It has an ecclesiastical seminary with 8 professors, and a gymnasium.

16. *Vladimir.*—Vladimir, 3000; Murom, 4500; Pereslavl-Zalesky, 3000; Suzdal, 3000; Iuriev-Polsky, 3000; Melenki, 3000; Viazniki, 2000; Alexandrov, 2000; Chuia, 2000.

17. *Nishnei-Novgorod.*—Nishnei-Novgorod, 18,000; Arzamas, 8000; Potchinki, 6000; Balakna, 3000; Madaievsk, 3000; Makariev, 2000; Pavlova, 6000; Murachkina, 6000. *N. Novgorod* (Lower Novgorod), an episcopal city, stands on a fine triangular height, at the confluence of the Volga and the Oka, in 56° 19′ 40″ north lat., and 61° 40′ 34″ east long, and consists of two towns; one on the low bank of the Oka, and the other on the top of the high bank overhanging it, the highest point, overlooking the Volga, is occupied by the Kremlin, or citadel. The public buildings are very elegant, and, with the

whole town, present an appearance of freshness and solidity. It has 26 churches, of great size and beauty; two monasteries, and a nunnery. Upon a low flat, on the north bank of the Oka, exposed to inundation from both rivers, lies a scene of bustle and activity unparalleled in Europe; a vast town of shops, laid out in regular streets, with churches, hospitals, barracks, and theatres, built of the most substantial materials. This place is occupied every year, from the first of July to the first of September, old style, by more than a hundred thousand people, from all parts of Asia and Eastern Europe, to attend the fair of Makarief, which is held here, and the business of which is of such importance, that the governor of the province attends it, residing for the time in a large and handsome palace. The annual official value of goods sold here is stated at 125,000,000 roubles, or £5,000,000 sterling; but the real value is reckoned at double that sum; and, while it lasts, the fair is frequented by two or three hundred thousand people. Every article of commerce, from the heaviest and bulkiest to the smallest and lightest, raw produce as well as manufactured goods, is brought here for sale. The fair derives its name from St. Macarius, under whose protection it is held; and who also gives his name to the place where it was formerly held, a decayed town on the left bank of the Volga, 56 miles below N. Novgorod. The site was changed in 1817.

18. *Tambov.*—Tambov, 16,000; Kozlov, 14,000; Temznikov, 6000; Usmane, 6000; Lipetsk, 6000; Morchansk, 6000; Spask, 6000; Elatma, 5000; Kadom, 4000; Chatsk, 4000.

19. *Riazan.*—Riazan, 10,000; Pkopine, 8000; Zaraisk, 6000; Kaçimov, 4,500; Ranenburg, 3000; Spask, 5000; Dorskov, 1000. *Riazan* is a fine town, with spacious streets and handsome houses. *Kaçimov* is a very ancient city, with a considerable trade in peltry; the remains of a palace and mosque, and other Tartar buildings, and the tomb of the terrible Khan Chagali.

20. *Tula.*—Tula, 39,000; Belev, 5000; Bogoroditsk, 4000; Efremov, 3000; Venev, 3000; Epifane, 2000. *Tula* is finely situate on the banks of the Oopa, 117 miles S. of Moscow, the houses filling a wide hollow, and spreading gently back till they reach two ridges of considerable elevation, which are covered with mansions of imposing appearance. Under the protection of Peter the Great, it became a place of great importance; and, his successors having continued to protect its artizans by every means in their power, it has risen to such a degree of importance, in some kinds of manufacture, as to be considered the Birmingham of the empire. It has been, however, almost ruined by two destructive fires in the reign of the present Emperor. The staple branch of industry is the manufacture of fire-arms. A great part of the iron and steel used is brought from Siberia; but iron of the best quality is also found in the neighbourhood. The soil abounds with ore, and in some places it may be reached by the plough. The mines are conveniently situate, and easily wrought; but, the forests having been consumed, fuel has become so scarce, that the forges are wrought at a very considerable expense. It is, besides, so very disadvantageously situate for communication with the great marts of the empire, that the expense of carriage raises the price of its manufactures above most people's means.—(*Bremner.*)

21. *Kaluga.*—Kaluga, 26,000; Gisdra, 7000; Borovsk, 5000; Kozelsk, 4000; Mestchovsk, 3000; Mosalsk, 3000; Malo-iaroslavetz, 1000.

22. *Orel.*—Orel, 31,000; Eletz, 15,000; Bolkhov, 13,000; Metsensk, 10,000; Karatchev, 9000; Livy, 7000; Sevsk, 6000; Briansk, 5000; Kromy, 4000; Dmitrovsk, 4000; Malo-arkhangelsk, 4000. *Orel* is a flourishing town, where all the provisions necessary for the victualling of Moscow are collected from Little Russia, such as grain, tallow, cattle, pigs, leather, honey, wax, wool; besides the corn and hemp sent to St. Petersburg for the navy. *Briansk* has an extensive manufacture of arms, a cannon foundry, an arsenal, and magnificent forests of excellent timber for ship-building, which are under the superintendance of the admiralty.

23. *Kursk.*—Kursk, 32,000; Belogorod, 10,000; Suja, 7000; Rylsk, 7000; Putivil, 6000; Miropolie, 5000; Novoi-Oskole, 5000; Steligry, 5000; Staroi-Oskole, 5000; Oboiane, 4000. *Kursk* is a fine episcopal city, occupying a broad valley, and climbing beautifully up the receding slopes of a circle of heights, which are intermixed with orchards and gardens. It is famous for its fine fruit, such as apples, pears, and prunes. In its district is the convent of *Korenaia*, celebrated for a miraculous image of the Virgin, which attracts great numbers of pilgrims. It is also the seat of one of the principal fairs.

24. *Voroneje.*—Voroneje (*Voronecz, Voronetz, Voronesch*), 19,000; Ostrogojsk, 4000; Novokhopersk, 2000; Pavlovsk, 3000; Mikailovka, Valuiki, 3000; Biruch, 2000.

25. *Kief.*—Kief, 56,000; Bugoslavl, 7000; Uman, 7000; Tcherkacy, 6000; Vasilkov, 5000; Makhnovka, 5000; Skvira, 4000. *Kief* (*Kiev, Kiew, Kioff, Kiow, Chioff, Chiow*—the English sound, we believe, is *Kee-eff*), the ancient capital of the original Russia, is a large town on the right bank of the Dnieper, situate to the west of an amphitheatre of hills, which rise abruptly in the middle of an immense plain. For a long time it was the prey alternately of Poles, Lithuanians, and Tartars, until, in 1686, it was finally ceded by the Poles to Russia. For many centuries it has been regarded as the Jerusalem of the North, the sacred and holy city of the Russians; and its numerous convents and churches, which crown the summit, and hang on the sides of the hills, with their domes and spires, chains and crosses, richly gilt, give the whole city a golden splendour. In the monastery of Petcherskoi are preserved 110 dried bodies of martyrs, which are visited by crowds of pilgrims from all parts of Russia. Kief is the seat of a university, and of an annual fair, frequented by about 30,000 persons, and which was formerly held at Dubno.

26. *Tchernigov.*—Tchernigov, 10,000; Nechin, 16,000; Novgorod Severski, 8000; Ghikhov, 9000; Starodub, 4000; Mglin, 5000; Batourin, 5000; Oster, 4000.

27. *Poltava.*—Poltava, 8000; Kobeliaki, 11,000; Krementchug, 8000; Mirgorod, 7000; Zenkov, 7000; Priluki, 6000; Gradijsk, 5000; Pereislavl, 5000; Lokhvitsa, 4000; Zolotronecha, 4. Gadiatch, 3. Romene, 3, Khorole, 3. Glinsk, 2. Lubny, 2. *Poltava* or *Pultava* is a small episcopal city, chiefly noted for the great battle fought in its neighbourhood between the Czar Peter the Great, and King Charles XII. of Sweden. The scene of action, now covered with rich corn fields, is a plain about 4 miles south-west of the town, and is marked by an artificial hillock, rising not more than 30 feet from the ground, with a large white cross on the top, bearing this inscription: "Here are interred the Swedes who fell in the great day of Poltava." The town stands on a lofty height, visible 20 miles.

28. *Kharkov*, or *Slobodes of the Ukraine.*—Kharkov, 13,000; Akhtyrka, 13,000; Belopolie, 11,000; Lebedine, 11,000; Soumy, 9000; Bogodoukhov, 9000; Valki, 7000; Tsume, 6000. Belovodsk, 6000; Krasnokontsk, 5000; Valtchansk, 5000; Nedrigailov, 5000; Slaviansk, 4000. *Kharkov* or *Kharkoff*, a flourishing commercial town, the seat of a university, and an ecclesiastical seminary. Several large fairs are held here annually.

29. *Iekaterinoslav.*—*Iekaterinoslav*, 8000; Nakhitchvan, 9000; Novomoskovsk, 7000; Taganrog, 6000; Rostov, 5000; Paulograd, 4000; Bakhmont, 4000; Mariopol, 4000; Lugone, 3000; Slavenoscbsk (formerly Donetz), 1000; Azov, 900. *Taganrog* is a considerable trading town on the Sea of Azov, near the mouth of the Don; but its commerce is greatly impeded, not only by the shallowness of the Don and the sea, which, it is said, may even be crossed at times on foot opposite Taganrog, but also by the ice, which continues from December to March, and closes the passage even of the Strait of Ienikaleb.

30. *Kherson.*—Kherson, 12,000; Odessa, 60,000; Elizavetgrad, 10,000; Nikolaef, 6000; Tiraspol, 5000; Berislavl, 3000; Krilov, 3000; Olviopol, 3000; Otchakov, 2000; Ovidiopol, 2000. *Kherson* is a small town, with a fortress and a harbour, at the mouth of the Dnieper. *Odessa* is situate on the north-western coast of the Black Sea, overhanging a wide and beautiful bay. Its principal portion extends along the top of a long range of cliffs commanding an extensive sea view. Immediately on the top of the cliff is an extensive public walk, planted with flowering shrubs and trees, and having the governor's house at one end, the Exchange at the other, and a statue of the Duc de Richlieu in an open area in the centre. One side of this walk is formed by a line of splendid houses, the residences of the principal inhabitants; and behind it are rows of parallel streets crossing each other at right angles. The houses in the best quarters are very lofty and handsome, generally built of a soft light-coloured limestone, and roofed with sheets of iron or painted wood. The want of good building and paving-stone is much felt; but considerable quantities are imported from Greece, Malta, and other places as ballast. The streets, consequently, are not paved. In 1796, the Empress Catherine resolved to build a city here, and it soon became a great resort for foreign traders. In 1802 the Duc de Richlieu, the governor, laid out the plan of a city on a gigantic scale, which already bids fair to realize the expectations of its founder. The inhabitants consist chiefly of Polish Jews, Italians, Greeks, and Germans, with a few French and English. Grain constitutes the most important branch of trade, the quantity exported every year being seldom less than a million of chetverts (each 0·68 of an English bushel.) Wool is also fast rising into importance. The greater part of the carrying trade is performed in Austrian ships; next to which in order are those of Sardinia, Russia, England, Greece, Turkey, Sweden, France, &c. The road is spacious and good, but open from north-east to south-east, with a bottom of mud and gravel; and when the mitel (north-easterly wind) blows, the shipping suffer greatly; vessels often start their anchors, and twelve or fourteen wrecks have been seen lying together on the shore. The winter, though sometimes severe, is generally very open; the trade is seldom interrupted by the frost for more than six or eight weeks; but such is their dread of the mitel, that when it blows no one ventures out of doors (ante page 508.) The thermometer rarely falls below 18° Fahrenheit. In summer, on the contrary, the heat is very intense, the thermometer often rising to 95°. The greatest annoyance during the warm weather proceeds from the clouds of dust which are raised by the slightest breath of air, even by the wheels of a carriage passing along the street. Odessa is a free port, but the limits of the privileged district are strictly guarded. It also contains a very important academic institution, the Richlieu Lyceum, which contains professors of Greek, Natural and Civil History, and the higher branches of science. Odessa is one of the cheapest towns in Europe to live in. *Elizavetgrad* is a fortified town, with an arsenal and magazines. *Nikolaef* or *Nikolaiev*, on the Dnieper, was once the great arsenal and building station of the Black Sea fleet; but has decayed rapidly since the removal of the naval station to Sebastopol. From 30,000, its population has fallen to 8000, or, as M. Babli says, 6000.

31. *Taurida.* — Simpheropol, 2000; Bakhtcheserai, 9000; Kara-su-bazar, 8000; Eupatoria, 7000; Theodosia or Kaffa, 6000; Orekhov, 4000; Perekop, 3000; Kertch, 2000; Sebastopol, 30,000; Ienikaleh, 600; Ekaterinodar, 3000; Taman, &c.—The principal part of Taurida consists of the renowned peninsula of the Crimea (the ancient Tauric Chersonese), which is of an irregular square form, measuring diagonally 190 miles from east to west, and 123 from north to south. It is situate between the Black Sea and the Sea of Azov, and connected with the mainland by the Isthmus of Perekop, which is 5 miles in breadth. The south-eastern coast is occupied by a range of mountains, which extend from the Strait of Ienikaleh to Cape Khersonese, the highest of which, *Chatir-dagh*, rises to 790 toises (5051 feet) above the level of the sea. The coast of this mountainous region is very picturesque, and great part of it has been laid out in vineyards; but though they have the advantage of a fine exposure and a good climate, the produce does not remunerate the labour of the vine-dresser; nor is the wine remarkable for either flavour or strength. It also produces garden fruits excellent of their kind, particularly apples, which are so highly esteemed, as to form an article of commerce as far as Moscow. The northern part of the peninsula, however, sinks into a boundless level steppe, with soil of a dark putrid loam, hard and smooth as a bowling-green, with brackish water, and without either springs or rivers, though the beds of rivers which once existed may still be traced. The soil is impregnated with saline matter; but wherever it is capable of vegetation, the surface is covered with plants, whose gaudy blossoms fill the air with refreshing fragrance. The climate has materially changed for the worse of late years; and fevers are so frequent in every part of the peninsula, that it is almost impossible for a stranger to avoid them. In summer, the thermometer sometimes rises to 100° in the steppe; long droughts constantly prevail; trees of every kind are of inferior size and beauty, and, if planted in the steppe, they altogether perish, after a brief existence of a year or two. The most valuable product is salt, which is derived from the lakes near Perekop, Kaffa, Koslov, and Kertsh. Salt is a government monopoly, and yields a considerable revenue. In 1833, the different lakes produced the immense quantity of 242,000 tons; about 13,000 men are employed in the works. The principal other articles of export are wine, honey, wax, leather, hides, wool, and lamb skins. The only manufacture worth notice is that of Morocco leather. The population consists of Tartars, Russians, Greeks, Germans, Jews, Armenians, and Gipseys; all of whom preserve their peculiar customs and religion distinct. The Tartars form the bulk of the population, consisting of *Nogays*, who live in villages, and pique themselves upon the purity of their lineage; and Tartars of the steppe, who are of less pure descent; and the Tartars of the south coast, who are a mixed race, largely alloyed with Greek and Ottoman blood; and despised on that account by the two former races. They are all Mahommedans, and Simpheropol is the seat of one of the two Muftis of the Russian empire. They are divided into mirzas or nobles, mollahs or priests, and peasants. The noble families are only about 250 in number; but there is a mollah for every parish. The Tartars are simple in their manners and dress, and live principally on the produce of their flocks and herds. Their character has been highly eulogized for sobriety, chastity, cleanliness, and hospitality; but they are not much disposed to regular industry, preferring the pastoral to the agricultural life; so much so, that even in the best years, a large quantity of corn has to be imported for the supply of the inhabitants. During the present century the Russian Government has endeavoured to improve their condition, by planting among them industrious colonists from Germany and elsewhere. SIMPHEROPOL, the capital, is a considerable city, with fine squares, wide streets, elegant houses, and all the public establishments requisite to conduct the affairs of an extensive province. The Tartar part of the city, named *Ak-metchet* (White Mosque or Church), is a small town with narrow unpaved streets, surrounded with old dilapidated walls. *Bakhtcheserai* or *Bagtcheserai* (Garden Palace), a large Tartar city, containing the fine palace and mausoleum of the Khans of the Crimea, in a highly romantic situation. The whole trade of the town is in the hands of the Karaite Jews, who possess a stronghold of their own, named Jufeid Kaleh (Infidels or Rogues Castle), on a high rock, where they and their families live in security, and are governed by their own laws. *Sebastopol*, near the south-western point of the peninsula, upon the south side of a fine bay, is a strongly fortified town with a fine citadel, and a roadstead so capacious, and with such good anchoring ground, that the fleets of Europe might ride in it, secure from every storm; and, such is the depth of water, that the largest ships may lie within a cable's length of the shore. There are, besides, five other small bays branching off in various directions, all equally commodious, and all lined with a series of capes naturally strong and easily defended. It is now the station of the Black Sea Fleet, and no expense or labour is spared to make the place impregnable. The population, of 30,000, are mostly all naval or

military. *Balaclava (Bella chiave)*, 10 miles S.E. of Sebastopol, is a small town deriving its name from its fine harbour, which enters from the Black Sea by a narrow strait only 30 yards across, and then expands into a basin 1200 or 1400 feet wide, and 300 fathoms deep, where large vessels may ride in safety during the severest storms. *Eupatoria* or *Kazlov*, on the west coast, is a Tartar city, inhabited almost exclusively by Crim Tatars, with a lazaretto, custom-house, several fine mosques, and a Tartar college. The great mosque, built in 1152, is the finest building in the Crimea, and much admired for elegance, extent, and solidity. The bay being open and exposed, the maritime commerce of the city is very inconsiderable. About 17 versts from Eupatoria is a famous salt lake with mud baths, which enjoy a high reputation, and attract invalids from every part of the empire. *Kaffa* is an ancient but decayed city on the south-east coast, with a fine well-sheltered bay. *Kertch*, on the Strait of Ienikaleh, is the most bustling seaport of the Crimea, and, from its situation, is remarkably well adapted for a commercial station. It has regular streets and good houses. *Ialta* or *Yalta*, 70 miles S.W. of Kaffa, is a small place, with well-built houses, streets prettily laid out, and an air of commercial improvement everywhere visible; and from the security of its harbour, and other advantages, it has every chance of becoming a prosperous town. *Kara-su-bazar* (Black water Market), is an ill-built, but busy commercial inland town, between Simpheropol and Kaffa. Near Sebastopol is the ancient *Chersonesus*; the site of the famous temple of the Tauric Artemis, where shipwrecked strangers were offered in sacrifice to the goddess; and *Mangoup Kaleh*, one of the most remarkable objects to be found in any country. This is a castle situate on a mountain inaccessibly precipitous, perfectly isolated, and surmounted with extensive fortifications. The rock, moreover, has been cut into a variety of chambers, watch-towers, &c. affording a secure retreat for a garrison of several thousand men. It was the work of the ancient Greeks and the Genoese, but is now deserted. *Ienikaleh* (New Castle), is a fortress which commands the entrance to the Sea of Azov.

33. *Bessarabia.*— Kichinev, 20,000; Akerman, 13,000; Khotim, or Choczim, 7000; Belzi, 7000; Bender, 5000; Kilia, 900; Ismail. *Ismail* is celebrated for its siege and capture by the Russians, under Suvaroff, in 1789. It was then a strong Turkish fortress, on the north bank of the Danube, with 30,000 inhabitants, but has dwindled down to a town scarcely worth notice. *Bender* is noted as the place where Charles XII., King of Sweden, resided for seven years, after the battle of Poltava.

33. *Country of the Don Cossacks.*—This government extends along the Don to the north-eastward of the Sea of Azov, and seems to have been acquired by its present inhabitants, a branch of the Little Russians, in the 16th century. It is an immense plain, destitute of hills; some parts of it are fruitful; but, in general, the soil is barren; agriculture is neglected, and little progress has been made in the useful arts. The Cossacks used to enjoy a great degree of political liberty, under a democratic government, at the head of which is an Ataman or Hetman. They are liable in military service to the Czar, and are particularly useful as light horse, and in irregular warfare. The only town worth notice in their country is *Tcherkask*, which is built upon piles in a marsh; and contains about 3000 houses, which the inhabitants are unwilling to leave for the new town of *Novo-Tcherkask*, more recently built in a healthier situation.

34. *Vilna.*—Vilna, 56,000; Kowno, 6000; Smogornie, 1000; Vilkomir, 4000; Vidzy, 2000; Rossieny 2000; Chavli, 2000; Telcha, 2000; Troki, 1000; Jouburg; Keydani. *Vilna*, or *Wilna*, 430 miles S.W. by S. of St. Petersburg, and 200 E. of Königsberg, is a large and neat town, at the confluence of the Vilia and the Vilenka, and surrounded by picturesque hills. It is the ancient capital of Lithuania, and was for many years the seat of a flourishing university, which has been recently reduced to two chairs, one of medicine and the other of theology, and stripped of its rich endowments, libraries, and museums. Its cathedral of St. Stanislas is one of the finest churches in Poland, and occupies the site of the temple of Perkunas, the Jupiter of the Lithuanians.

35. *Grodno.*—Grodno, 9000; Brzesc-Litowski, 8000; Slonin, 4000; Volkovisk, 2000; Lida, 2000; Novogrodeck, 2000; Kobrin, 2000.

36. *Vitepsk.*—Vitcpsk, 15,000, the greater part of whom are Jews: Polotsk, 10,000; Velige, 7000; Nevele, 3000; Lutzine, 3000; Dunaburg, 2000; Regitsa, 2000; Lepel, 1000.

37. *Mohilev.*—Mohilev, 21,000; Mtislav, 4000; Bikhov, 4000; Tchaucy, 3000; Tcherikov, 2000; Rogatchev, 2000; Belitsa, 2000; Orcha, 2000. *Mohilev* is a place of considerable trade, but is chiefly noted as the see of an archbishop, who is the primate of the Roman Catholic Church in Russia.

38. *Minsk.*—Minsk, 15,000; Bobruisk, 5000; Slutsk, 5000; Pinsk, 4000; Nesvige, 4000; Disna, 3000; Druia, 3000; Mozyre, 3000; Borisov, 3000.

39. *Volhynia.*—Jitomir, 11,000; Bertitchev, 20,000; Staro-Constantinov, 9000; Dubno, 9000; Zaslavl, 8000; Ostrog, 8000; Kremenetz, 6000; Lutsk, 5000; Radzivilov, 5000; Wlodzimierz (Vladimir), 4000; Novgorod-Volhynsk, 4000; Rovno, 4000; Kovel, 4000.

40. *Podolia.*—Kamenecz-Podolski (Kaminiec) 13,000; Mohilev, 8000; Tultchine, 8000; Vinnitza, 7000; Balta, 7000; Bar, 6000; Khmelnik, 4000; Litine, 3000; Bratzlav, 3000.

41. *Bialystock.*—Bialystock, 6000; Bielsk, 2000; Sokolka, 2000; Gousondze, 1000.

42. *Kazan.*—Kazan, 48,000; Tchistopol, 6000; Tcheboksary, 4000; Kozmodemiansk, 4000; Mamadych, 4000; Laichef, 2000; Jadrine, 2000; Siliarsk, 2000. *Kazan*, or *Kasan*, 760 miles S.E. by E. of St. Petersburg, is a large well-built city, the greater part being situate upon rising ground, not far from the Volga. It is the principal entrepot of the trade of Siberia, and the seat of considerable manufactures. It is the see of an archbishop; possesses one of the four great ecclesiastical academies of the empire, with 16 professors, and about a thousand students; a university, and several other literary and scientific establishments. Kazan was formerly the capital of an independent Turkish or Tartar kingdom, conquered by the Czars in the sixteenth century; and the Tartars still form a considerable, and not the least industrious part of its population.

43. *Viatka.*—Viatka, 9000; Jjevski-Zavod, 12,000; Sarapul, 4000; Slobodskoi, 4000; Elabuga, 4000; Orlov, 3000; Malmych, 3000; Nolinsk, 2000; Yaransk, 2000.

44. *Perm.*—Perm, 10,000; Iekaterinburg, 11,000; Verk-Isseisk; Kungom, 8000; Solikamsk, 2000; Verkhoturia, 2000; Nijni-Tajilsk, 10,000. *Perm* is a small episcopal city, with a gymnasium and an ecclesiastical seminary. *Solikamsk*, a small town, noted for its rich salt mines, its peltry trade, and a botanic garden. *Iakaterinburg* is situate on the east side of the Urals, in Asia.

45. *Simbirsk.*—Simbirsk, 13,000; Syzran, 9000; Samara, 6000; Karsume, 4000; Alatyr, 4000; ropol, 2000.

46. *Penza.*—Penza, 13,000; Saransk, 8000; Kerensk, 6000; Troitsk, 4000. *Penza* is an episcopal city, with an ecclesiastical seminary and gymnasium, soap and leather works. *Saransk* is situate in a fertile territory, and noted for its tanneries. *Kerensk*, noted for sail-cloth. *Ista*, noted for its carpets, and a great imperial manufactory of tapestry. *Mokchane* and *Nijnei Somor* are places of considerable trade; and the latter has a well frequented annual fair.

47. *Astrakhan.*—Astrakhan, 40,000; Krasnoi-iar, 3000; Tchernoi-Iar, 3000; Enotaicusk, 1000. *As-*

trakhan, formerly the capital of a Tartar kingdom, is built on an island in the Volga, by which it is accessible for vessels from the Caspian Sea. The houses are almost all built of wood, and the streets are irregular, dirty, and unpaved; but its numerous churches, fine orchards and vineyards, its extensive suburbs, and its kremlin or citadel, give it a fine appearance at a little distance. It is the see of a Russian and of an Armenian archbishop, and contains a board of admiralty, which superintends all the shipyards and fisheries on the river and its shores. Favoured by its situation, which enables it to communicate with the richest and most fertile parts of the empire, and with the shores of the Caspian Sea, Astrakhan has become the entrepot of the trade carried on by the Russians with Persia, Turkestan, and India. The citizens are also distinguished for their industry; of which the manufacture of cotton stuffs, silk, morocco, chagrin, tallow, and dyeing, are the principal branches. It has an ecclesiastical seminary, a gymnasium, and a botanic garden.

48. *Saratov.*— Saratov, 35,000; Volgsk, 11,000; Kusnetz, 7000; Petrovsk, 5000; Khvalynsk, 4000; Tzaritzin, 4000; Sarepta, 3000. *Saratov* is a regularly built town, on the right bank of the Volga. The industry of its inhabitants, and their flourishing trade, have raised it rapidly to its present rank among the principal cities of Russia. It possesses a gymnasium, and some buildings very remarkable for this part of the world. *Volgsk*, a large town on the Volga, with tanneries, brickworks, and a large manufactory of arms. *Tzaritzin* possesses the most frequented mineral waters in the empire, and its fortifications have been lately reconstructed. *Sarepta*, a small but very flourishing town, on a branch of the Volga, near Tzaritzin, established by the Moravian brethren, and the most important of the numerous German colonies in this part of the empire. In this government is situate the salt lake of *Ielton*, or *Yelton*, from which a great quantity of salt is annually produced, nearly 100 miles N.E. of Tzaritzin; and *Sarai*, the ancient capital of the Tartar dynasty of the Golden Horde, whose powerful monarchs acted an important part in the middle ages, extending their terrible sway from the Ural to the Danube.

49. *Orenburg.*— Orenburg, 6000; Ufa, 8000; Troitsk, 2000; Uralsk, 11,000. *Orenburg* is a fine, well fortified town, the entrepot of the trade with Bokhara. It possesses an ecclesiastical seminary, with 8 professors, and a seminary for the army, with 11. *Troitsk*, a fortified town, which also shares in the trade with Bokhara. *Zlatoust*, a large village, with iron forges and gold mines recently discovered. *Miask*, a village, with copper mines, and gold-washings, which, between 1823 and 1828, produced 250 lbs. of gold. *Menzilinsk*, a small well-built town, with a flourishing trade. *Ietski*, a small fortified town, with a rich mine of rock salt, considered to be the best in Russia. It contains also, since 1817, a number of smiths, jewellers, watchmakers, and other artizans, who carry their work to great perfection. *Uralsk*, the capital of the Cossacks of the Ural, is a large town, chiefly dependent upon the produce of the fisheries, the value of which is about £160,000 a-year. *Ufa* is an episcopal city, the residence of the bishop of Orenburg.

50. *Poland.*—Warsaw, 150,000; Kalisch, 15,000; Kielce, 5000; Sandomir, 2000; Lublin, 12,000; Zamosz, 5000; Siedlek, 3000; Plock, 6000; Pultusk, 3000; Ostrolenka, 1000; Sowalki, 3000; Augustovo, 1000. WARSAW (*Warszawa* of the Poles, *Warschau* of the Germans) is situate on the left bank of the Vistula, 170 miles S.E. by S. of Danzig, in the middle of a vast sandy plain. The city proper is ill built; but the suburbs are fine and spacious, with wide, straight, and well-paved streets. *Praga*, the largest suburb, is situate on the right bank of the river, across which there is a bridge of boats. The royal palace, Zamek Krolewski, is a vast building; and, besides it, there is a great number of other fine palaces and public buildings; a cathedral, dedicated to St. John, and numerous other churches, with many scientific and literary establishments. In the immediate neighbourhood of the city is the superb castle of *Villanow*, which belonged to the great king John Sobieski, and where he died in 1696. *Kalisch* is one of the finest cities in Poland. It has important cloth-works, a military school, a lyceum, with a valuable library and museum, and a Catholic bishop. *Czenstokhowa*, near Kalisch, is a small town, with a sanctuary of the Virgin Mary, which is visited every year by a crowd of pilgrims. *Lublin*, a large episcopal city, with some fine buildings, and a considerable trade. *Pulawy*, near Lublin, was noted for the magnificent residence of the princes Czartoryski, who spent a great part of their revenues in rendering it one of the finest places in Europe; but it was sacked and burned in the late war. *Ostrolenka*, a small town on the Narew, 65 miles N.N.E. of Warsaw, where a great battle was fought between the Russians and the Poles, in the late revolutionary war. *Zamosz*, a small fortified town, built in the Italian style, in the midst of extensive plains.

The KINGDOM OF POLAND formerly included a very large territory, extending from the eastern frontier of Germany to the borders of Muscovy, about 700 miles, and from the shores of the Baltic to the Carpathian mountains and the river Dniester, on the borders of Turkey. The Polané, a Slavonic people (so called from their fertile plains), early acquired a certain degree of celebrity, and established the centre of their power, first at Kruswitza (A. D. 846), then at Gnesen, and latterly at Cracow. Christianity was introduced among them by their King Mieczislaus I. in 965; but his son, Boleslaus the Great, deserves more properly to be considered the true founder of the Polish monarchy, the limits of which he extended from the Dnieper to the Elbe, and from the Baltic to the Danube and the Theiss. While all the other Slavonic nations were subjugated by Turks or Tartars, Magyars, Greeks or Germans, the Poles preserved their independence, and long stood forth as the advance guard of Europe against the Infidels. The kingdom was at last so completely disorganised by its feudal aristocracy and elected king, that its neighbours took advantage of its weakness, produced by dissension and anarchy, to divide it among themselves. The first dismemberment took place in 1766, and the second in 1792, when the Polish territory was finally divided among the Empress of Russia, the Emperor of Germany, and the King of Prussia. During the wars of the French Revolution, various changes took place in the arrangement and boundaries of their respective divisions; but they were settled at last on their present footing in 1815; nearly two-thirds of the kingdom being then confirmed to Russia. *Cracow*, the ancient capital, was declared a free city, under the protection, or to speak correctly, under the domination of the three Sovereigns; and can hardly be said to preserve even its nominal independence. The Poles of the present day call themselves *Polak*, in the plural *Polacy* (Polatzy), and their country *Polska*.

CRACOW is situate on the left bank of the Vistula, 140 miles S.S.W. of Warsaw, in a fine valley; with a number of fine buildings, but narrow, irregular, and ill-paved streets. Its cathedral, regarded as the finest and most interesting church in Poland, contains the tombs of the kings and great men of Poland, from Boleslaus the Frisian, and Casimir the Just, to Joseph Poniatowski and Thaddeus Kosciusko. The ancient royal castle was for some time occupied as barracks, and is now possessed in part by a benevolent society; and the bishop's palace is now the finest in the city. The University is one of the most ancient in Europe, and possesses a rich library and a botanic garden. Population about 25,000. Cracow communicates with its suburb of Podgorze, in Galicia, by a bridge across the Vistula. The legislative power is vested in an assembly of deputies chosen by the communes, and the executive in a senate, consisting of twelve members and a president, who is the chief of the republic, and is elected every two years.

SPANISH PENINSULA.*

(*España.*)

Though this Peninsula contains two perfectly distinct and independent kingdoms, it forms only one geographical region, the description of which cannot well be separated according to the political divisions. We shall, therefore, as in the case of Scandinavia, first describe the natural features of the whole Peninsula, and then divide the remainder of our account into the two sections of *Spain* and *Portugal*.

Astronomical Position. — Between 36° and 44° north latitude, and beween 4° east, and 10° west longitude.

Dimensions. — The longest straight line which can be drawn on the map of the Peninsula, extends diagonally from Cape St. Vincent, in the south-west, to Cape Creuse, in the north-east, a distance of 720 miles. From the point of Tarifa, on the Strait of Gibraltar, almost due north to Cabo de Peñas, on the coast of Asturias, the distance is about 530 miles; but measured diagonally, from Cape de Gata, on the Mediterranean, to Cape Ortegal, in Galicia, the length is about 560 miles. The greatest breadth from east to west is from Cape Finisterre in Galicia to Cape Creuse in Cataluña, a distance of 648 miles; but in the middle region, from the Rock of Lisbon to Cape la Nao, in Valencia, it is only 500 miles; and at the narrowest point, along the 40° parallel, about 450. The superficial area is computed at 216,061 square English miles, of which 179,465 belong to Spain, and 36,596 to Portugal.

Boundaries. — *Northern :* — The Bay of Biscay and the Pyrenees. *Southern :* — The Atlantic Ocean, Strait of Gibraltar, and Mediterranean Sea. *Eastern :* — The Mediterranean Sea. *Western :* — The Atlantic Ocean.

General Aspect. — The country forms a large and very compact Peninsula, lying at the south-western extremity of Europe, with the continent of which it is connected by an isthmus 230 miles broad. The interior may be considered as one vast mountain; for, though it consists chiefly of plains, these form a table-land from 1800 to 2600 feet above the level of the sea, which is traversed by numerous mountains. Around this central nucleus extends a narrow belt of maritime lowland, sloping gradually towards the sea, and broken into an alternation of mountains and valleys, which produce a most agreeable variety of aspect, and present a pleasing contrast to the bleak and barren sameness by which the central region is characterized.

Spain may indeed be considered as a series of mountain terraces which, projecting successively their rugged edges towards the south, present a flight of gigantic steps from the Pyrenees to the Mediterranean Sea and the Ocean. The Pyrenees themselves, which form the boundary between France and Spain, extend across the isthmus, in a general direction from S.E. to N.W. They rise abruptly from the Mediterranean Sea at Cape Creuse, and soon reach an elevation of 1600 to 2000 feet, which they maintain to the *col of Pertus*, the great pass into Spain by Perpignan, which is practicable at all seasons, and with all kinds of carriages. Further west, the height of the chain increases considerably, but its general features are of a softened character, the mountains rising in rounded forms, and terminating in broad plateaus. The *cols* or passes likewise, instead of rocky defiles, present plains or shallow ravines, which afford the means of easy communication between Roussillon and Cataluña. At Cambredasay, however, to the south of Mont Louis, the range suddenly assumes a character of rugged magniticence; and the hills of the Alberes change into craggy and sharp-pointed peaks, forming precipitous masses of rock, of difficult access, and almost impossible to cross. The crest of the principal chain soon after attains the height of 9000 feet, but sinks again to about 7000, at the great bend, near the source of the Garonne, beyond which the steep-

* Many Spanish names are spelled indifferently with *x* or *j*, both of which are pronounced as strong gutturals, without the slightest resemblance to the sound of the same letters in English. The nearest approach that can be made to their sound in English, is that of a strongly aspirated *h*. The double consonant *ch* is invariably pronounced as in the English words *chair, cheese, child, choke, church*, and never like *sh* or *k*, as in French and Italian. Double *ll* and ñ with a dash, or, as the Spaniards call it, *n con tilde*, are pronounced like *ly* and *ny* before a vowel, or as the Italian *gl* and *gn*. *Qui* is pronounced as *Kee*. *Examples.*—Mexico or Mejico, Ximena or Jimena, Xucar or Jucar, Loxa or Loja, Xeres or Jeres, Xenil or Jenil, Anduxar or Andujar, Guadalaxara or Guadalajara, Truxillo or Trujillo, Don Quixote or Quijote de la Mancha, Coruña, Cataluña, Quito, Coquimbo; pronounced — Mehico, Himena, Hucar, Loha, Heres, Henil, Anduhar, Guadalahara, Truhilyo, Don Kechotty de la Mantsha, Corunya, Catalunya, Keeto, Cokeembo.

In Portuguese names *ch* and *x* are pronounced as *sh*; *lh* and *nh* represent the Spanish *ll* and ñ con tilde, or ly, ny; *Que* or *Qui* are pronounced as *Kee*; *j* before a vowel as in English, and in other circumstances as *ee*.

ness becomes more remarkable, and the crest rises more precipitously into sharp and lofty peaks. This is the region of the Central or High Pyrences, the mean height of which is about 8312 feet, though several of the peaks rise 2000 or nearly 3000 feet higher; the detached summits of Maladetta, and Mont Perdu, exceed 11,000 feet. The *cols* or *ports* in this region are numerous; the most celebrated being the *Portillon d' Oo*, the *Port d' Oo*, and tbe *Breche de Roland;* the last of which consists of a gap 300 feet wide, cut through a wall of rocks rising from 300 to 600 feet in height. Further west the chain gradually becomes lower as it approaches the Atlantic; instead of a precipitous crest surrounded by deep abysses, the mountains assume a milder form, presenting a series of circular and undulating summits of easy access, covered with pasturage, and sometimes intersected by torrents; while the small elevation of the chain, and the cols or passes afford a multitude of communications between the adjoining countries. The Pyrenees terminate in a long point or promontory, which strikes into the sea on the south side of the Bay of Figueras, at the mouth of the Bidassoa. On both sides the Pyrenees throw off numerous branches, which gradually subside into the plains; they have also in different places parallel chains, though not of great extent, which in position approach nearer to the roots of the mountains than their elevated ridges. The valleys of the Pyrenees are not only numerous, but of a singular conformation. All the great valleys are transversal; commencing at a col in the crest, and extending at right angles with the direction of the chain. There are also longitudinal valleys formed by the parallel chains, but these are of small extent, and oftener partake of the character of gorges or ravines than of valleys. The valleys consist generally of a series of basins, with contracted necks of communication between them, and are traversed by rivers, some of which in the higher regions form, or originate in, small lakes. These lakes, when they occur at a great elevation, within the limits of perpetual snow, and are sheltered from the rays of the sun and the hot winds, are always covered with ice; and some of those, in lower situations, where they are more exposed, continue frozen till the end of August. The southern face of the central chain is more rugged and precipitous than the other, so that access from the side of Spain is generally more difficult and laborious than on the side of France; and the French valleys ascend to the crest of the chain by a tolerably easy and gradual rise, or rather by steps more or less lofty, an arrangement which is not so marked on the Spanish side; but it is a question yet undecided whetber the inclination of the northern or of the southern face of the chain be the more precipitous.

Some distance before the Pyrenees terminate at the point of Figueras, a branch strikes off to the westward, and extends in a direction parallel to the coast of the Bay of Biscay to the Capes Ortegal and Finisterre; so that in fact the mountains which reach the ocean near Bayonne, and are usually considered as the western termination of the Pyrenees, are only the termination of a lateral branch which leaves the main chain at the head of the valley of Bastan; while the mountains of Asturias and Galicia may be considered as properly the main chain itself. In like manner, the eastern extremity, which reaches to the Mediterranean, is but another lateral branch, which leaves the main chain at the head of the valley of Teta, and passes through French Cerdagne; while the principal chain extends northward in the direction of the Cevennes. The western prolongation forms a single chain with short offsets, as far as tbe 6° W.; but, beyond that point, it divides into several ranges, which terminate respectively at Capes Ortegal, Finisterre, and Silleiro. The eastern portion of tbis chain attains the height of 4000 or 5000 feet, the western portion rises a thousand feet higher.

To the south of this long line of mountains extend the table lands of Spain, the greater part of which consists of a series of river basins divided by parallel ranges of mountains, and having a somewhat gradual slope westward to the Atlantic Ocean. The watershed between these basins and those which have an inclination towards the Mediterranean Sea, consists of a long line of bigh ground, nowhere forming a continuous chain of mountains, in a direction from south to north, but seeming rather to consist of the terminations and diverging offsets of the parallel chains which extend from east to west. To the eastward of the watershed a narrow belt of country, intersected by short rivers, extends to the Mediterranean Sea, except in the north-east, where the basin of the Ebro penetrates across half the breadth of tbe Peninsula. Of the chains whicb range across the Peninsula, that which rises to the west of the source of the Ebro, called Idubeda by the Romans, extends in a south-eastern and southernly direction, forming the watershed between the affluents of the Ebro, and those of the Tagus and the Duero, till it becomes connected, on the borders of Castille and Aragon, with the mountains of Toledo and Castille, where it forms one of the highest points of the Peninsula, from which branches extend into the northern part of Valencia. The next parallel chain to the soutbward branches from the first, near the sources of the Xalon and Tajuna, to the south of Soria, and extends in a long and widely diverging series of ranges south-westward, under the various names of *Somosierra, Guadarama, Sierra d' Avila, Sierra de Gata, Estella, &c.* to the Rock of Lisbon, where it terminates, after forming the watershed between the Tagus and the Duero. The next parallel chain begins near Hueté, to the south of Cuença, where the ground gradually rises. Bolder bills appear at Madridejos, and, a little further south-west, the *Sierra de Ivenens* clearly shews the direction of the ridge, which is soon after known by the name of *Guadalupe*. It then runs between Truxillo and Merida, under the name of *Sierra de Marchal*, penetrates into Portugal, and terminates at Cape Espichel, after forming the watershed between the Tagus and the Guadiana. The next chain is the *Sierra Morena*, which separates the basins of the Guadiana and tbe Guadalquivir, and has a mean elevation varying from 3000 to 4000 feet. It begins in the vicinity of Alcaraz, on the eastern border of La Mancha, and extends westward, with some interruptions, to Cape St. Vincent, before reaching which it is connected by diverging offsets or cross ranges, with the mountains which terminate at Cape Espichel. This chain forms the soutbern boundary of the great table-land, above which its elevation on the northern side is little, while, on the soutbern side, it sinks abruptly into the valley of the Guadalquivir, the upper part of which is more than 1000 feet lower tban the plains of La Mancha. The last, or most southerly parallel chain, extends from the western borders of Murcia, through Granada and Andalusia, under the names of *Sierra de Gador, Sierra Nevada, Sierra Bermeja*, and *Sierra de Ronda*, and terminates on the coast between Cadiz and Gibraltar. The Sierra Nevada is the highest of the Spanish mountain chains; several of its summits are above the line of perpetual congelation, which in this latitude is 9915 feet above the level of the sea. The northern base of the Sierra is bounded partly by the plateaus of Guadix and Granada, the latter of which has an elevation of 2000 feet, and is supported on its northern side by the *Mountains of Jaen*, which divide it from the valley of the Guadalquivir. The southern base of the Sierra Nevada sinks very rapidly towards the sea. These mountains, however, do not form continuous chains; they are, on the contrary, divided by numerous transverse valleys.

Besides these principal mountain chains there are many others of less extent and elevation; among which the most considerable is that which rises south of the Ebro, on the borders of Aragon, Old and New Castille and Valencia, and which consists of many ridges running in different directions.

The lofty table-lands which lie among these mountains, form a striking contrast with the mural precipices which rise above and divide them. The whole of the central region of Spain, from the Ebro to the Sierra Morena, and from the frontiers of Portugal to the eastern watershed, consists of a series of *parameras* or plains, separated from each other and from the lowlands by the parallel mountian chains which we have described, and having an elevation varying from about 2000 to 2664 feet above the level of the sea. Generally speaking the table-land of Old Castille is higher than that of New Castille. The southern region likewise contains single table-lands, which, however, neither have the

extent of the central plains, nor are connected with them. In a general view, Spain may be said to consist of huge mountains, elevated table-lands, rich and wide valleys, deep ravines, rapid rivers, extensive pastures, with few or no inclosures. Forests are occasionally met with; but the greater part of the country is bare, and of a whitish arid aspect, which fatigues the eye and depresses the spirits. The sea coast is in general rocky, the harbours are often intricate, and the entrance to them rendered difficult by sand-bars.

GULFS, BAYS, AND STRAITS. — *Gulf* or *Bay* of *Rosas*, and *Gulf* of *Ampola*, in Cataluña; *Encanizada*, a large inlet on the coast of Murcia, formed by a long narrow tongue of land, and communicating with the sea by a very narrow entrance; *Gulf of Almeria*, on the coast of Granada; *Gibraltar Bay* and *Strait*, *and Bay of Cadiz*, on the coast of Andalusia; *Lagos Bay*, *St. Ubes Bay*, the *Estuary of the Tagus*, *Mondego Bay*, and *Bahia d' Aveiro*, on the coast of Portugal; *Ria de Vigo*, *Ria de Pontevedra*, *Ria d' Arosa*, *Ria de Muros y de Noya*, *Ria de Corcubion*, *Ria de Camarina*, *Ria de Corme*, the *Harbour of Coruña*, *Ria de Betanços y Sada*, and *Harbour of Ferrol*, in Galicia; *Bay of Santander*, *Bay of Santona*, and others in Asturias and Biscay.

CAPES. — *Creuse*, *St. Sebastian*, *Tortosa*, *Nao*, *San Martin*, *Palos*, *Gata*, *Santa Elena*, and *Europa Point*, on the Mediterranean coast; *Tarifa Point* and *Cape Trafalgar*, in Andalusia; *Santa Maria*, *St. Vincent*, *Sines*, *Espichel*, *La Rocca* or the *Rock of Lisbon*, *Carvoeiro*, *Fezurao* and *Mondego*, in Portugal; *Silleiro*, *Corrobedo*, *Finnisterre*, *Villano*, *Sisargo*, *Prior*, *Ortegal*, in Galicia; *Penas*, *Pena Rubia*, *Lastres*, *Prieto*, *Oyambre*, *Ajo*, *Machicahco*, in Biscay.

ISLANDS. — 1. The *Balearic Islands*, viz., *Majorca*, *Minorca*, *Iviça*, *Formentera*, *Cabrera*, *Dragonera*, *Conojera*, and others, in the Mediterranean sea. *Majorca* or *Mallorca*, the largest, is situate between 39° 15′ and 39° 57′ north lat., and 2° 9′ and 3° 20′ east long., about 100 miles from the coast of Valencia. Its figure is an irregular rhomboid, and its area about 1360 square miles. The surface is hilly, and the northern half consists of high ranges of mountains, divided by deep valleys and gullies, bordered by precipices. The southern portion is finely variegated by corn fields, vineyards, olive groves, orchards, and meadows. The soil on the hills and mountains is rich and fertile, in the valleys it is moist and even marshy, and on the shore are tracts of sand and morasses. There is little wood, and no large rivers; but abundance of springs and good water. The climate is mild, agreeable, and healthy; snow and frost are almost unknown. The inhabitants resemble the Catalunans in complexion and features; their chief and almost only occupation is agriculture; but the produce in corn is barely sufficient for the support of the population. Neither rye nor maize is cultivated; but culinary vegetables and wine are abundant products. Olives and mulberries are also cultivated to a considerable extent, and produce large quantities of oil and silk. The other principal productions are flax, hemp, oranges, lemons, citrons, almonds, dates, figs, pistachio nuts, and capers. The sea abounds with fish, the taking of which affords employment to many of the inhabitants, and is a good nursery for seamen. Bay salt is made on the coast; and the stock of beeves, sheep, goats, swine, horses, and asses, is considerable. The principal towns are Palma, Falaniche, Manacor, Soller, Leuchmajor, Pollenza, and Bonalbufar. *Minorca*, 38 miles east of Majorca, contains an area of 240 square miles, about one quarter of which is cultivated, one-half pasture, and the remainder barren and waste. Wheat and barley are grown, but the produce is not sufficient for the supply. Fruit of all kinds is abundant, especially melons, grapes, and oranges; wine also is plentiful; but the chief rural wealth consists of the live stock, which consists of excellent breeds of asses and mules, cows which produce excellent cheese, sheep, goats, and swine. The climate is temperate and healthy. The island is of moderate height as approached from the sea, and its surface then appears level, with one remarkable exception towards the centre, called Toro, having on its summit a convent dedicated to the blessed Virgin. It has three excellent harbours: *Port Mahon* at the east end, *Fornella* on the north side, and *Citadella* on the west. *Iviça* forms an irregular polygon, 28 miles long by 14 broad. It yields wheat, oil, wine, flax, hemp, figs, almonds, raisins, oranges, lemons, cotton, and esparto; but its principal produce is salt, which is manufactured in great abundance in the lagunes around the island. The people are more attached to fishing than to agriculture; and the greater number of the men follow that employment, leaving the cultivation of the ground to the women, who are robust and industrious. *Formentera* is a small island to the south of Iviça; but neither it nor the others named are of any importance. The *Columbretes*, a group of rugged rocks, 35 miles from the termination of the limestone range which divides Valencia from Tortosa. The principal of the group, *Monte Colubre*, consists of the remains of an extinct volcanic crater; the highest peak of which is situate in north lat. 39° 53′ 58″, and east long. 0° 44′ 27″. The hilly part of Monte Colubre is covered with an exuberance of dwarf olives, geraniums, prickly pear, myrtles, and brushwood; but all the rest of it exhibits only hard lava, obsidian, and scoriæ. It contains also a few rabbits, but literally swarms with snakes, from which circumstance it is, with great probability, supposed to be the *Ophiusa* or Serpent island of the ancients. — (*Capt. Smith, Journal, R. Geog. Soc. Lond.*, i. 58.) The *Isla de Leon*, on the south-western coast of Andalusia, is separated from the mainland by the Rio de Santi Petri, and forms the Bay of Cadiz. Its northern end juts out into a long and narrow promontory, at the extremity of which is the city of Cadiz. The *Berlingas*, a dangerous cluster of rocky islets of Cape Carvoeiro, 50 miles north of the Rock of Lisbon. *Benidorme*, a small island on the coast of Valencia, 20 miles N.E. of Alicant.

RIVERS. — A conformation of country so mountainous as that of Spain would naturally lead us to expect a corresponding system of rivers. But, from various causes, particularly the nakedness of the country, the almost total absence of trees to collect and retain the moisture, and the consequent dryness of the atmosphere during the greater part of the year, the rivers of the Peninsula are neither so numerous nor so large as the number and the elevation of the mountains might seem likely to produce.

The EBRO rises near Reynosa, from a spring so copious that it turns a corn mill a few yards from its source. It flows south-east, and enters the Mediterranean at Alfaques, after a course of 110 leagues. It presents insuperable obstacles to navigation. Its principal affluents are—the *Xalon*, increased by the *Jiloca*, at Calatayud; the *San Martin*, and the *Guadalupe*, on the right; the *Aragon*, increased by the *Arga*, which passes Pamplona; the *Gallego*; the *Segre*, which passes Puycerda, Argel, and Lerida, and receives the *Vero*, *Cinca*, *Noguera*, *Ribagorzana*, and the *Noguera Pallaressa*, all on the left.

The DUERO, or DOURO, has its source to the north of the town of Osma, in a deep lake at the summit of the Sierras de Urbion, and flows westward into the Atlantic Ocean at Oporto. It is navigable to the tower of Montcorvo, 30 leagues from the sea. Some of its affluents rise at remarkable elevations. The *Adoja* is, at Avila, 3,721 feet above the level of the sea; and the *Eresma*, where it flows past the castle of Segovia, is 3,321 feet above the same level. The principal affluents of the Douro on the right are, the *Pisuerga*, which passes Valladolid, and receives the *Arlanzon*, which passes Burgos, and the *Esgueva* and the *Carrion*; the *Valderaduay*; the *Esla*, which passes Leon; the *Ardoja*, increased by the *Eresma*, and the *Tormes*, which passes Salamanca. In Portugal it receives the *Sabor*, *Tua*, and *Tamega*, on the right; the *Coa* and *Agueda* on the left.

The TAGUS, TAJO, or TEJO, rises in the mountains of Albarracin, on the north-eastern border of New Castille, from an inconsiderable spring named Pie Isquierdo. In its course through the province of Cuença, it is considerably augmented by the waters of several streams, and before reaching Aranjuez, it dashes through the mountains into a pool of great depth, named *Olla de Borlaque*. From

that point the river flows westward by Aranjuez, Toledo, Talavera, Alcantara, and Santarem, and enters the Atlantic Ocean through a wide estuary at Lisbon. Its principal affluents on the right are:—the *Jorama*, increased by the *Henares*, and the *Manzanares*, which passes Madrid; the *Guadarama*; the *Alberche*, and the *Alagon*; the *Elga*, *Ponsel*, and *Zezere*, in Portugal. The *Magasca*, and *Salor*, in Estamadura; the *Sever*, *Zatas*, and *Cunha*, or *Almanzor*, in Portugal, are the principal affluents on the left.

The GUADIANA has its source in the pools of Ruidera, to the north of Alcaraz in La Mancha. Its course is first to the north-west for 8 leagues, after which it sinks underground, and disappearing for 7 leagues, reappears near Daymiel, at the *Ojos* (Eyes) *de Guadiana*. The intervening space is occupied by a large morass, across which the road to Andalusia passes by a long bridge or causeway. It then passes Ciudad Real, Merida, Badajos, Mertola, and enters the ocean at Ayamonte. The only important affluent is the *Giquela*, which some consider to be the principal branch.

The *Gadalquivir* rises among the mountains on the frontiers of Murcia, Jaen, and Granada, runs westward past Andujar, Cordova, and Seville, and enters the ocean to the northward of Cadiz. It is navigable for large vessels up to Seville; but its bed being obstructed by shallows, the navigation is extremely tedious. Its principal affluents on the right are:—the *Guadalimar*, increased by the *Guadalen* and the *Amudiel*, which is considered by some geographers to be the principal branch of the river. The *Xenil*, or *Jenil*, from Granada, is the principal affluent on the left.

The *Segura*, with its affluents *Mundo* and *Sagonera*, in Murcia; the *Xucar*, or *Jucar*, with its affluents *Cabriel* and *Albadya*, and the *Guadalaviar*, in Valencia; the *Llobregat*, and the *Ter*, in Cataluña; the *Minho*, in Galicia and the north of Portugal; the *Mondego*, and the *Vouga*, in Beira; the *Suado*, or *Sadao*, or improperly *Caldao*, rises in Alemtejo, flows through that province and Portuguese Estremadura, and enters a lagune below Setubal; the *Nalon*, in Asturias; and the *Bidassoa*, in Navarre, which forms in the lower part of its course the boundary between France and Spain, and enters the Bay of Biscay at Fuenterabia.

LAKES.—There are no lakes deserving of notice in Spain; on the coast of Valencia there is a laguña named *Albufera*, abounding in fish, which has been farmed sometimes at 60,000 piastres a-year.

MOUNTAINS.—See HESPERIAN SYSTEM, page 143.

CLIMATE. — The diversities of the climate are determined by the physical conformation of the country; and the temperature is therefore much more equable on the coasts than in the interior. On the north and west coasts the prevailing winds blow from the west, and in winter and spring discharge abundant rains. The climate is much milder on the coasts of the Mediterranean, where the east winds, which are the most frequent, never acquire the force which the west winds possess at the southern extremity of the Peninsula, especially at Cadiz. Thus, the coasts of Cataluña, Valencia, Murcia, and Granada, enjoy a mild temperature, which seldom falls so low as 32°, and generally keeps above 57° Fahrenheit. Winter, indeed, is almost unknown on the east coast, sheltered as it is by the high lands of the interior, and warmed by the rays of a cloudless sun. On the plateau of the Castilles, heat accumulates slowly, and it is not till the beginning of July that the air acquires a temperature between 57° and 68°, occasionally rising to 77°. In August, however, the coolness of the nights shoots into the morning, and is felt in the evening soon after sunset, by which means the heat of the day is considerably moderated. Except in the northern provinces, the climate of Spain is everywhere remarkable for its dryness, which sometimes degenerates into a scorching drought, when the rivers entirely disappear, vegetation is destroyed, and men and animals die of thirst. In the elevated region, which contains the capital, the summer heat is, in fact, always so great, that, according to the Spanish saying, Madrid has nine months of winter and three of hell! The ordinary extremes of temperature at Madrid are 90° Fahrenheit in summer, and 32° in winter; but there is scarcely a year in which the thermometer does not rise above 100° and fall below 14°. Many of the mountains rise above the limits of perpetual snow; while the high and unsheltered plains are swept by cold blasts in winter, which blow with such piercing keenness, that sentinels have sometimes been frozen to death on their posts at the royal palace. This is, however, greatly owing to the want of wood, which is scarcer in Spain than in any other country of Europe. In fact, along the road from Bayonne to Cadiz not a forest is to be seen, except a few patches in Biscay, the groves and avenues of Aranjuez, and in a few valleys or gorges in Andalusia; all the rest of the kingdom in this direction presents a whitish arid appearance. The mountains, destitute of vegetation, no longer attract the moisture necessary for the support of plants in the valleys and plains; the rivers are, consequently, almost all inconsiderable throughout the greater part of their rapid courses; and the plains being wholly naked and unsheltered, the climate of this elevated region necessarily experiences those extremes of heat and cold which are so detrimental to the fertility of the soil, and to the health and comfort of the people.

As Portugal is very narrow from east to west, the climate might be supposed to be nearly uniform; but the inequalities of the ground, the direction of the valleys, and the proximity of the sea, have a considerable influence on the temperature. The lower districts have a short winter, and a sort of double spring. The first begins in February, but the succeeding months are sometimes cold and rainy, at other times dry and warm. The crops are reaped in June, and by the end of July the plains are scorched, the grass becomes yellow, the trees wither, and it requires

much labour and care to preserve esculent vegetables. But, while the heat along the coasts is often more excessive than in the Torrid Zone, the temperature of the higher regions is cool and mild. The low country is adorned with a second vegetation about the end of September or beginning of October. The plants of spring suddenly succeed those of autumn, the meadows are covered with new grass, the trees seem to have resumed their foliage, and the orange groves, then in flower, give to October all the charms of the finest spring. Winter commences at the end of November, and continues till February; and is attended by much rain and violent winds. The cold is then very keen among the mountains; but, though snow collects upon the high grounds, the rivers are seldom frozen. The greatest cold is generally brought by the east wind which passes over the snowy summits of Castille. In the other seasons, and particularly in summer, the north-west wind usually prevails in the morning, and the south-west in the afternoon. But the climate of Portugal is not everywhere found as we have now described it. According to Colonel Franzini, the winter at Lisbon and near the mouth of the Tagus, continues during December, January, February, and March; spring, during April and May; summer, from June to the end of September; and autumn, during October and November. The basin of the Mondego, in the neighbourhood of Coimbra, is more temperate than that of the Tagus, but is also more humid and less salubrious. The climate of Oporto and Peñafiel is equally humid, the winters are colder and more cloudy, while, on the contrary, the summers are very warm. In Algarve the winters are always mild; and in July, August, and September the meadows are always enamelled with flowers. If October be rainy it is not unusual to see the fruit trees flourish anew in November. December and January are the wettest months, and abundant rains in April ensure a plentiful harvest.

Geological Structure.—The principal mountain chains differ not only in their external appearance, but also in their internal composition. They have, however, this in common, that their nuclei consist, in whole or in part, of primary and transition rocks; though not only the species but also the relations of these vary in the different chains. A great body of granite, which seldom reaches the highest points, and contains beds of gneiss and other primary rocks, ranges through the Pyrenees. It is surrounded by a predominating mass of crystalline slate and transition rocks, among which the most abundant are clay slate and limestone. On the contrary, in the Biscayan mountains, the older rocks are not widely distributed, and appear first in Galicia, where there is a great extent of granite accompanied by crystalline slate. The principal mass of the chain between Old Castille and New Castille, is composed of gneiss and granite. Between the Tagus and the Guadiana the principal rock is also granite. The chain of the Sierra Morena consists principally of transition rocks; but granite appears on its southern base, towards the Guadalquivir. Granite, however, seems to be wanting in the highest southern mountains, where the middle chain consists of mica slate abounding in garnets, which in the ridges lying before them, passes into less crystalline mica slate, chlorite slate, and clay slate, sometimes inclosing large beds of compact limestone, marble, dolomite, and serpentine. On the south coast, newer transition slate and grauwacke slate, with beds of flinty slate, rest here and there on the older slate. The basis of the rock of Gibraltar is formed of these rocks. The structure of the mountain chains corresponds generally with their chief direction. Not only the alternations of the rocks, but also the direction of the strata are conformable with the direction of the chains; but the dip or inclination of the strata varies. The primary and transition rocks are rich in ores; but the mines are confined principally to the south-western and south-eastern parts of Spain. The lead-glance mines of Linares occur in granite; those of the Sierra de Gador, in a limestone which may be referred to the oldest transition rocks; and the rich quicksilver mines of Almaden are contained in clay slate.

The secondary rocks rise to a great height on the Spanish side of the Pyrenees; and even some of the highest summits are composed of them. The western continuation of the Pyrenees, in Biscay, consists principally of secondary rocks; and it is probable that the lofty limestone ridges which separate Asturias from Leon, are a continuation of the Biscayan formation. On both sides of the Somosierra the primary are skirted by the secondary rocks, but the latter are far from the middle and higher parts of the chain. Following the road from Madrid to Andalusia, secondary rocks are met with near the transition clay slate of the passes of the Sierra Morena; but on the south side of the chain they are only to be met with very low down. The high mountains of Jaen are formed of secondary rocks; and in the northern projection of the Sierra Nevada, between Granada and Guadiz, there are also secondary deposits, which, however, do not reach the higher ridges. In the vicinity of Malaga also new secondary rocks lie on the foot of the older mountain masses, and ridges of secondary rocks extend from the hills of Ronda towards the southern extremity of Spain, where the rock of Gibraltar is chiefly composed of them. The secondary rock formation extends from one mountain chain to another, rises or falls in the intermediate spaces, and forms the widely extended high table-land. The most important of the secondary rocks are variegated sandstone, marl, gryphite limestone, and the white or Jura limestone. The sandstone and marl are rich in gypsum and rock salt; and at Vallecas, near Madrid, and in some other places, there rests upon it, in single beds, that rare deposit consisting of meerschaum, with nests of silicious minerals. It is to this formation, which is widely spread over the table-lands of Old and New Castille, that these countries owe the reddish-brown colour of their soil, and the tiresome uniformity of their surface. The lias formation is widely distributal in the northern provinces, and seems to reach a considerable height on the side of the Pyrenees. In Biscay, it is remarkably prolific of an excellent iron ore. Probably also the vast beds of coal in the Asturias are subordinate to it. The white Jura limestone forms in most places the immediate cover of the variegated sandstone and marl, and is found in the north, as well as in the south of Spain in single ridges, and great mountain masses. Wherever it occurs, its presence is announced by the yellowish-brown colour of the soil which covers it. Secondary formations of limestone occur also in the Sierra de Estrella, in Portugal. Some members of the chalk formation also occur in Spain. The sandstone of the rocky ridge of the southern coast, between Cadiz and Gibraltar, and the limestone in the district of Los Barios, resemble the rocks of the Sachsen Schweiz. The first agrees with the German quadersandstein, the latter with the Saxon planer-limestone, the equivalent of pure chalk.

Tertiary deposits do not appear to be very abundant. In the south, particularly near the sea coast, there is a deposit, full of marine organic remains, in which calcareous sand and pebbles occur, partly

in a loose mass, and partly more or less firmly compacted by means of a calcareous cement. In the vicinity of Cape St. Vincent, and all around Lisbon, the strata consist of rocks of the tertiary class, more or less mixed with trap. True volcanic rocks are said to be found in Murcia; and around Olot, in Cataluña, about fifteen distinct cones with craters occur in a space of 15 geographical miles from north to south, and 6 from east to west. The existence of plutonic rocks has been noticed in few places. Characteristic basalt occurs in Cataluña. Hypersthene rock has been found in the vicinity of Salinas de Pozo, in Old Castille, in contact with Jura limestone; and in the mountains of Jaen, near to variegated marl, containing masses of gypsum, greenstone rocks have been found.—(*Professor Hausman of Göttingen; Edin. New Phil. Journal*, xxii. 267. *Lyell's Geology.*)

The gold and silver mines, which supplied the ancients with these precious metals, are now, with the exception of the silver mine of Guadalcanal, and the gold mine of Adissa in Portugal, either exhausted or abandoned; but iron of the best quality, tin, copper, mercury, and indeed every valuable mineral abound in different parts of the Peninsula. Coal and salt mines are wrought in the Asturias, Aragon, and La Mancha, in Spain; and in Portugal, beds of coal occur near Oporto, and there is a mine of coal at Cabo de Buarcos, in Beira. Precious stones are found in various places; granite, jasper, alabaster, and marbles, of the greatest beauty and variety, may be quarried from almost every mountain.

VEGETABLE PRODUCTIONS.—The vegetable productions of the Peninsula are rich and various; the principal of which are wheat, wine, oats, barley, maize, rice, oil, honey, sugar, hemp, flax, esparto or sedge, cork, cotton, silk, sumach, barilla, and almost all kinds of fruit. Andalusia is the granary of Spain; Leon and Old Castille are almost equally productive. Barley is cultivated everywhere, but especially in Granada, Seville, Old Castille, and Murcia. Valencia produces chiefly maize and rice; the sugar-cane is also cultivated there with success, and a little cotton is grown. The olive flourishes in almost every part of Spain, and also the vine; but the eastern and southern provinces yield the finest grapes. Cataluña is exceedingly rich in forests; the mountainous districts are covered with the beech, the pine, the evergreen oak, and the cork-tree; while the chestnut and the hazel grow on the sides of the hills and in the valleys. Elms and willows fringe the margins of the rivers, and all sorts of fruit trees flourish in the plains. The mountains of Biscay still exhibit extensive forests. In Asturias apple-trees abound, from which a quantity of cider is made. Woods of ash, elm, white poplar, mulberry-tree, carob-tree, and different varieties of oak, occur in other districts. The pine and the yew clothe some of the Sierras, and in some parts of Valencia are forests of palm-trees. The two Castilles and La Mancha are almost entirely bare of timber. The inhabitants of these provinces have an inveterate and inexplicable prejudice against trees, which are mercilessly cut down or destroyed before they attain any considerable size; and the charcoal, which constitutes their principal fuel, is procured from the forests of the loftier mountains, which, from their elevation, have escaped the destructive propensities of the people. Nor is Spain excelled by any country in the abundance, variety, and delicious flavour of its fruits. Besides those common to other temperate climates, it contains many which usually belong to the tropical regions; and, in addition to the fig, pomegranate, orange, lemon, and citron, the date, plantain, banana, and cheremoya, find a congenial soil and climate in some parts of the Peninsula. Flowers and medicinal herbs grow wild on all the mountains, and load the air with the rich fragrance of their perfumes. In short, such is the variety of the temperature, occasioned by the difference of elevation, that there is scarcely a vegetable production of any country for which a fitting place may not be found in Spain. To afford a correct idea of the diffusion of the copious variety of vegetable products, the country may be divided, according to M. Huot, into six divisions. In the first, or central division, which comprises the whole of Old and New Castille, Leon, and Estremadura, none of the apple tribe are seen; the olive begins to appear only towards the south; but the vine is found in every part of it. Here, too, flourishes the ilex. In the Southern or Bætic region, which extends from the Sierra Morena and the mountains of Algarve to the sea, between Cape Palos and Cape St. Vincent, the climate exceeds that of Sicily in the intensity of its heat, and the maritime lowlands might almost be considered as a zone of Africa, being marked by the presence of the banana, the dwarf-palm, the aloe, and the cactus; while the stony districts are covered with the wild fig and the caper. Towards the middle of last century the whole coast of this region, from Marbella to Vera, was planted with sugar-canes, which yielded a produce equal in quality to that of the Havanah. Above this lowest zone rises another always verdant, and covered with the plants of Italy and Sicily; the myrtle, the orange, the lemon, the rose-laurel, the agnus-castus, the tamarisk, and the nerio, being the most common. A third and higher zone is adapted for the vine and different kinds of grain; forests of pine are found still higher; and above all are alpine plants, and perpetual snow. The eastern or Iberian region extends along the Mediterranean sea, from Cape Palos to Cape Creuse, and inland to the great watershed, including also the basin of the Ebro. It possesses all the plants of Sicily, the Archipelago, and the Levant. The olive flourishes everywhere, the carob-tree and the lentisk grow together, while the

myrtle, the laurel, the fig, and the mulberry, display their varied foliage. The grape of this region yields a strong wine; but, as the country rises towards the mountains, there occur various zones of different kinds of vegetation. The Lusitanian region extends from Cape St. Vincent to the Rock of Lisbon, and eastward to the Sierra de Estremos; while it is sheltered from the north winds by the mountains on the north of the Tagus. The lower parts are covered with sandy heaths; but one zone may be distinguished by its orange and olive groves. In its southern range are found numerous plants, long supposed to be peculiar to Madeira and the Açores, and even some of those of the Canaries. Many South American plants likewise thrive there, and some of them may even be considered indigenous. The Gallegian or Galician region extends from the Rock of Lisbon to Cape Finisterre, the productions of which differ from those of Lusitania. The oak and the chestnut abound; but the olive and the orange appear only in the low vallies, towards the south of the Douro. The northern or Cantabrian region comprises all the country from the sources of the Adour to Cape Finisterre, along the coasts of the Bay of Biscay. Downs or links occur along the coasts, but none of them are extensive. The characteristic of the region is the absence of the cistus and the rose-laurel. The orange, the olive, and the vine, are reared with difficulty; but the hills and valleys are covered with fine forests, rich crops of grain, and verdant meadows. The apple flourishes throughout the region, and cider is substituted for light wines by its inhabitants.

Animals. — The animal kingdom presents nothing remarkable. The horse is, however, entitled to particular notice. The Arabs, when in possession of the country, stocked it with their finest breeds; and although the race, like everything else, has degenerated, it still shews many of the points by which it was once distinguished. The other domesticated animals are mules, asses, beeves, swine in vast numbers, sheep in millions, and multitudes of goats; nor are there wanting wild animals, as bears, wolves, and wild boars, which neglect and decay have left the undisturbed tenants of some of the wilder and more sequestered districts. The sea-coasts abound with fish, which afford employment to many of the inhabitants, and furnish lawful food during the numerous fasts of the Catholic Church.

KINGDOM OF SPAIN. — (España.)

This kingdom includes the greater part of the Peninsula, and is divided into a number of large provinces, inhabited by people differing in character, manners, and customs, who speak different languages or dialects, and are separated as widely by their interests and feelings as by their locality.

People. — It would be difficult, we might almost say impossible, to give a fair representation of the national character of the Spaniards, not only on account of the varied aspect which it assumes in the several classes of society, but because the natives of different provinces differ from each other not less widely than the inhabitants of distant countries. The Castillians, especially those of Old Castille, pride themselves in their high sense of honour, and are described as gloomy and taciturn, more solemn and stately than the people of other provinces, but as upright, generous, and sincere. The Gallegos, or Galicians, are the most industrious, and claim to be the most thoroughly trustworthy. They are the reapers and general labourers of both Spain and Portugal; and their very name, from this circumstance, has become synonymous with servant. Next to them the Catalans and Valencians, though differing as much as the Scots and Irish, have the reputation of being active and enterprising. The Murcians bear the worst character, and are described as lazy, listless, plotting, and suspicious. The Biscayans are precisely the reverse, being laborious, active, frank, lively, sociable, fiery, and generous. The Estremadurians are indolent and vain; and the Andalusians partake of the character of the Spaniard and the Arab. With the vivacity natural to the people of southern climes, they unite the imaginative and careless character of the people of the East. Sober and patient, they are always gay and lively, although in a state of the utmost physical want; but necessity renders them active, industrious, and even ingenious. They are considered a boastful people, and indeed are characterised as the Gascons of Spain; and their Arabic pronunciation accounts for the epithets bestowed upon them by both Spaniards and foreigners. The Spanish community is divided into two great castes, those of pure Gothic or blue blood, and those of mixed Gothic and Moorish descent, or black blood. The former constitute an inferior class of nobility, called hidalgos (i. e. *hijos de algo*,

son of somebody), who are entitled to the appellation of Don, and are admissible to posts of honour in the state or army. They also enjoy several other privileges and immunities, and look with great contempt on their black-blooded brethren.

What is called by foreigners the Spanish language, is properly the speech of Castille. It seems to have been formed during the three centuries of Visigothic dominion, and is evidently the result of a mixture of the Teutonic with the Latin. The Arabic afterwards enriched it with a number of expressions, and exercised some influence upon its pronunciation. Under the dominion of the Moors there was a period during which the Arabic was almost universally employed; but the Spaniards who had taken refuge in the mountains still retained their native tongue, although they did not all speak the same dialect. In Cataluña the Provençal or Limousin, prevailed; in Asturias, Leon, and Old Castille, the Castillian; in Galicia, the Gallego, the parent of the Portuguese; in Navarre and some parts of Biscay, the Escualdunac or Basque. When, in the eleventh century, the Christians began to recover Spain from the Moors, their language was spread with their conquests towards the south; and Spain became divided, in respect of language, into three portions. The Catalan, spoken in the states of Aragon, extended from the Pyrenees to the southern borders of Murcia; the Castillian prevailed through all the central region, from Asturias to Granada; and the Portuguese from Galicia to Algarve.

Population. — According to the old historians, the population of Spain, about the year 1380, was estimated at 21,800,000; in 1618, the estimate was 9,000,000, or 7,500,000; in 1700, 8,000,000; in 1723, 7,625,000; in 1726, 5,423,000; in 1769, 9,301,728; in 1788, 10,143,000; in 1803, 10,351,000; in 1821, 11,248,000; in 1826, 13,712,000; but, according to the estimate published by the government in August 1837, it amounted only to 11,964,000. According to the official returns of 1826, the population in that year consisted of the following classes: — Nobility, 1,440,000; citizens, farmers, and others having the qualification of electors, 1,560,000; citizens and householders, 1,573,686; employed in agriculture, 8,613,470; mercantile and manufacturing, 2,318,256; domestic servants, 276,000; vagabonds, 140,000; smugglers, 100,000; customhouse officers, 40,000; officers of the inquisition, 22,000; wandering beggars, 36,000; convicts, 2000. In 1803, the clergy of cathedrals and parishes amounted to 86,546; the officers of the Inquisition and Cruzado, 8,659; monks, 69,664; nuns, 38,429. Total of religious persons, 203,298, or one in fifty of the population. The distribution of this population offers the most extraordinary contrast. Guipuscoa has 700 inhabitants to the square mile; Valencia, 513; and Navarre, 466; while, on the other hand, the provinces of Cuença, Salamanca, and Estremadura, are nearly as thinly peopled as Tartary.

Education. — The education of the people has always been greatly neglected in Spain, and for this many causes might be assigned: among which the weakness and incapacity of the government; the dread, on the part of the governing powers, civil and ecclesiastical, of knowledge and its effects on corrupt institutions; the innate love of the people for a life of reckless adventure, and their wandering habits, increased of late by the long struggle for national independence, and the recent civil war. So far, however, from being wanting in institutions to promote education, Spain was, perhaps, the country of Europe where they most abounded. No country had a greater number of endowed schools; but nowhere have the objects for which these were instituted been so completely disregarded, or their endowments more grossly misapplied. During the last years of Ferdinand VII., the education of the people was almost exclusively entrusted to the Jesuits. The study of the physical and mathematical sciences was denounced, and many a university was deprived of its endowments. This lamentable state of things has been increased, rather than diminished, by the revolution. However good in themselves such institutions might have been, they were so closely allied with the church which had so long misruled this unhappy country, that when the church itself was struck down, they fell along with it; and as the ministers who have succeeded each other during the last seven years have shewn much more zeal in destroying than in erecting, the country has been deprived of many institutions which might have been made useful, without having others substituted for them. Numerous projects for the establishment of a general system of education have been submitted to the Cortes, but nothing has yet been done. The country still remains without one well-conducted school, or one wisely-regulated university. Individuals, however, have been endeavouring to accomplish what the government has left undone. A society is now established for educational purposes, consisting already of more than five hundred subscribing members. Their attention has hitherto been confined to the establishment of infant schools in the metropolis, but the committee intend soon to direct their attention to the higher schools, and to offer to the government the assistance of their money and their advice. — *(Correspondent of Athenæum*, from Madrid, 5th February 1840.)

Religion. — The Roman Catholic faith is exclusively professed in Spain, and in no other country had the church acquired a more complete control of the government and the people. The country literally swarmed with hosts of idle and luxurious

monks and priests, who lived upon the wealth of the land without contributing in the smallest degree to the welfare and improvement of the people. They kept them, on the contrary, in a state of the most abject ignorance and superstition, opposing every obstacle to the diffusion of knowledge, and making every thing subservient to their selfish interests. But, though the worst parts of the establishment have been swept away, they have left behind them a mass of evil which must long continue to retard the moral improvement of the people, who are said to have passed at once from superstition to infidelity. The hierarchy consisted of seven archbishops, namely those of Toledo, Seville, Santiago, Granada, Burgos, Tarragona, and Zaragoza; and of 47 bishops, namely those of Cordoba, Cuença, Siguenza, Jaen, Segovia, Carthagena, Osma, Valladolid, and the titular bishop of the order of Santiago, suffragans of Toledo; Malaga, Cadiz, Canaries, and Ceuta, suffragans of Seville; Salamanca, Tuy, Avila, Coria, Placencia, Astorga, Zamora, Orense, Badajos, Mondoñedo, Lugo, and Ciudad-Rodrigo, suffragans of Santiago; Guadix and Almeria, suffragans of Granada; Pamplona, Calahorra, and Palencia, suffragans of Burgos; Barcelona, Lerida, Tortosa, Vich, Urgel, and Salsona, suffragans of Tarragona; Huesca, Barbastro, Jaca, Tarazona, Albarracin, and Terruel, suffragans of Zaragoza; Segorbe, Orihuela, and Majorca, suffragans of Valencia; and the two independent Bishops of Leon and Oviedo. The Archbishop of Toledo is primate of the kingdom, Chancellor of Castille, and a perpetual member of the Council of State. The influence of this hierarchy was once all powerful, but is now rapidly declining. The regular clergy, with their monasteries and convents, have been suppressed; the whole property of the church has been confiscated, and the secular clergy made entirely dependent upon the state.

Government. — Before the war of independence (1808-14), the government was an absolute monarchy, except in the three provinces of Biscay, which have always enjoyed great privileges called *fueros;* in particular, the right of having provincial assemblies elected by the people to watch over their interests, to fix the assessments for local purposes, and the amount to be paid to the king as a gratuitous gift. These provinces, moreover, communicated with France without the obstacle of custom-houses, the line of which was placed in rear of them. After the French invasion, the ancient Cortes, or National Assembly, which had been long abolished, was called together in 1810, in the Isle de Leon, and in 1812, published a constitution, of the most democratic character, based upon that of the French of 1791. The single assembly instituted by this constitution was composed of deputies chosen by the juntas of parishes, districts, and provinces, the last of which directly appointed the deputies. The government was declared to be an hereditary limited monarchy, with the sovereignty residing essentially in the nation, which alone had the right of establishing fundamental laws. The king shared with the Cortes the legislative power, but had only a suspensive veto upon the acts of the assembly. He had, however, the sole executive power; his person was declared sacred and inviolable; and his ministers only were responsible. But this constitution was abolished by Ferdinand VII. when he returned to Spain in 1814; and the king resumed his former absolute power. In 1820, a military insurrection broke out in the Isle of Leon, the constitution of 1812 was again proclaimed, to which the king was compelled to adhere; but, in 1823, the Duc d'Angoulême, at the head of a French army, set the king at liberty, overturned the new system, and restored the ancient absolute rule. In 1832, Ferdinand, having no male issue, abolished the Salic law, which was first established in Spain by the Bourbon dynasty, and destined his daughter as his successor. His brother, the infant Don Carlos, publicly protested against this violation of his rights; but the king's will prevailed. On the death of the king, in the following year, his widow, Queen Christina, assumed the reins of government as Regent, in the name of her infant daughter, who was proclaimed queen by the name of Ysabel II. She was acknowledged by all the central and southern provinces; but Biscay and Navarre proclaimed Don Carlos; more, however, with the view of maintaining their ancient privileges, which seemed to be threatened by the new government, than from a regard to his interests. In 1834, the Regent promulgated a new constitution under the name of the Estatuto Real, and the Cortes were re-established under a new form. They were divided into two estates or chambers; the one styled that of the *proceres* (nobles), composed of the prelates and hereditary grandees of Spain, and of certain persons named for life by the Crown; the second, called that of *procuradores*, composed of citizens elected for three years by the juntas of provinces, the members of which were elected by the municipal bodies or ayuntamientos. The second chamber alone had the right of imposing taxes, but neither chamber was permitted to discuss other matters than those submitted to their deliberation by royal decree. The

Cortes convoked in 1836, having been suddenly dissolved in May of that year, an insurrection broke out in August at San Ildefonso, where the Court then resided, and forced the Queen-regent to accept the constitution of 1812. The constitution, however, and the government remain in an extremely unsettled state; the Spaniards have completely broken through all the trammels of that despotism under which they were oppressed for centuries; the spirit of radical reform has pervaded every corner of the Peninsula; and nothing, it appears, will now satisfy them but the most thoroughly popular institutions.

The kingdom of Spain was first formed in the year 1516, by the union of the kingdom of Aragon, with that of Castille and Leon, in the person of Joanna, the daughter and heiress of Fernando the Catholic, the last king of Aragon, and of his wife Isabella, in her own right Queen of Castille and Leon. Joanna's son, Don Carlos I., was the first King of Spain. He was also Archduke of Austria, and is best known in history as the Emperor Charles V. His descendants possessed the throne till 1700, when the Austrian dynasty became extinct by the death of Don Carlos II. who left his kingdom by will to Philip Duke of Anjou, the grandson of Louis XIV. King of France, and great grandson of his aunt, Anne of Austria, the daughter of Philip III. King of Spain, and wife of Louis XIII. King of France. Philip's accession was opposed by the Archdukes of Austria, who claimed the kingdom as the natural heirs; but, after a protracted warfare, Philip prevailed, and became the founder of the existing Bourbon dynasties of Spain and Naples. The kings of Spain of the Bourbon race have claimed and exercised the sovereignty of the order of the Golden Fleece, as attached to their crown; while it is also claimed and exercised by the Emperor of Austria, as the heir of the founder, Philip Duke of Burgundy. There are, besides, three other distinguished orders of knighthood properly Spanish, the grandmasterships of which have also been annexed to the Crown, namely:—The Order of Calatrava, founded in 1158 by Sancho King of Castille; The Order of Alcantara, founded in 1156; and the Order of Santiago, founded in 1170, both by Fernando II. King of Leon. There are also two minor orders, that of Montesa, founded by Don Jayme the second King of Aragon and Valencia, in 1317; and that of Carlos III. founded in 1771.

FINANCES. — The system of taxation in Spain is in the highest degree defective, and has nearly every fault which can vitiate a revenue system, and render it a curse to a country. It is grossly unequal and arbitrary, and the functionaries employed in collecting it are, from the highest to the lowest, guilty of the most flagrant corruption and abuse. For the last thirty years at least, the revenues have hardly ever exceeded the expenditure, exclusive of the interest of the debt; and they are at present in a state of great disorder. From papers published for the use of the Cortes, it appears that the expenditure for the year 1840 was estimated at £16,900,000, and the income at only £10,270,000, leaving a deficiency of £6,630,000; and even in this income was included an extraordinary contribution of £3,500,000. The national debt exceeds £160,000,000. The whole revenues would not suffice to pay the interest of the debt; and Spain is virtually in a state of bankruptcy, without credit abroad, and without the means of raising at home a revenue sufficient for the necessary expenditure of the state.

ARMY AND NAVY. — The army of Spain, which, during the sixteenth century was the best in Europe, gradually declined, like every other department of the State, till, at the period of the French invasion, it was found to be utterly inefficient and useless, and rather an incumbrance than an aid to its allies. Of late years, however, it has been newly organized, and placed in a state of considerable efficiency. Every exertion has been made to pay the troops regularly, and, though slow in their operations, the soldiers have proved sufficient to maintain the Queen's government, and defeat the pretensions of her rival uncle Don Carlos; though the latter has been supported by Austria, and perhaps by other governments. The Spanish military navy has ceased to exist.

PRODUCTIVE INDUSTRY. — *Agriculture.* The greater part of the land belongs to the nobility, the church, and towns or corporations; and agriculture is generally in the most wretched state. None, or scarcely any of the lands in Leon, Castille, Estremadura, and Andalusia are inclosed. Farms are everywhere small, and the farmers are in a state of great poverty. Notwithstanding the lowness of rents, and the cheapness of living, the agriculturists are unable to make the smallest advances on account of their farming operations, and are obliged to raise funds by mortgaging their crops. Even the growers of oil and wine frequently sell the anticipated produce of their lands for three-fourths of its value. The farmers live in the meanest huts, crowded

together in villages. The operations of treading and cleaning the corn are performed in the open air, and the grain is left in heaps in the field till it can be sold. The implements of husbandry are of the rudest kind, especially in Old Castille and Leon, where the soil is sandy and easily cultivated. In Andalusia, and along the coast of the Mediterranean, where the soil is more tenacious, implements of a better sort are in use, but they are still very rude. The use of fanners is nowhere known, except in a few of the seaport towns from which corn is occasionally shipped. The tenant, after paying tithes, and other public burdens, has little more than half the produce left to pay rent and labour, and to support his family. In Biscay estates are more divided, and the provincial government grants a portion of the reserved land to every applicant, on condition of his building a house, and cultivating a certain portion of it. The rich irrigated lands around Granada, Murcia, and Valencia are let in very small portions, seldom exceeding ten acres, and often not more than one or two. They yield two, three, or even four crops in the year, principally of vegetables, maize, and red pepper; and are much more valuable than the corn-lands of Andalusia and Castille. The farmers have neither the means nor the enterprize necessary for an improved system of agriculture, and, although they had both, the want of a market for their produce, or of a motive to attempt improvements, would prevent any from being made. Agricultural improvements, however, have taken place to some extent in Biscay, Navarre, and Aragon, each of which provinces has its separate laws and administration, and the oppressiveness of the general government is consequently less felt. Their produce is rye, maize, wheat, barley, and oats. In Leon, Castille, and Andalusia, agriculture is almost confined to the growing of wheat, which is sown at the commencement of the rains, after a slight ploughing. The system of a rotation of crops is unknown. On the banks of some of the rivers, in low lands, and in the neighbourhood of villages, where the wells are good; beans and other vegetables are cultivated, and occasionally maize. The most careful cultivation is to be found in the *vegas* and *huertas* of Granada, Murcia, and Valencia, the extent of which is considerable; and the waters of the Xenil, the Segura, and the Xucar rarely fail to afford a sufficient supply for the purposes of irrigation. These are therefore justly looked upon as the gardens of Spain, and produce not only every variety of fruits, but also all kinds of vegetables and plants used as food or as materials for manufactures. The mild red pepper grown in the huerta of Murcia, is celebrated all over Spain, and forms a very considerable article of trade with the interior; rice is the principal produce of the huerta of Valencia; mulberries are extensively cultivated in both, and silk is produced in large quantities. But these rich and beautiful valleys are by no means to be considered as a proof of the agricultural capabilities of Spain; for, if we except the northern provinces, where the temperature approaches that of England, and where, by successive falls of rain, the land is kept moist and fertile, with a few maritime districts in the south and south-west, and some valleys watered by mountain streams, or which admit of artificial irrigation, the rest, comprising the whole interior table-lands, or nearly one-half of the kingdom, sometimes resembles more a Libyan desert than a country adapted for cultivation. There the farmer is entirely dependent upon the weather; and if he collects his harvest once in three years, he considers himself repaid.

Many causes have undoubtedly contributed to produce the present low state of agriculture; the principal of which is the peculiar nature of the tenures by which landed property is held. Three fourths of Spain consist of indivisible *mayorazgos*, or estates held in very strict entail, a system which operates as a bar to improvement, and keeps even the proprietors themselves, as well as their tenants and dependents, in continual poverty. Tenures in mortmain were also for a long time continually on the increase, and these discouraged improvement and paralyzed industry, by enhancing the price of land, and rendering the acquisition of territorial property more difficult, just in proportion as they diminished its real or productive value.

Another of the evils which afflict Spain is the *Mesta*, an incorporated company of proprietors of migratory sheep, who are invested with many exclusive privileges highly prejudicial to the interests of agriculture. The Mesta originated in an alliance formed between the mountaineers and the inhabitants of the plains about the year 1556, for the purpose of placing their flocks and herds under the protection of the laws; and in process of time it contrived, not only to monopolize the whole herbage of the kingdom, but also to convert the arable lands into open pasture. This injurious association consists of nobles, persons in power, members of wealthy monasteries and ecclesiastical chapters, who claim and exercise the right of feeding their flocks on the pasture lands all over the kingdom, and almost free of expense; it has caused these privileges to be digested into a regular code; has instituted tri-

bunals of its own for punishing at pleasure any infraction of its rights; and actually enjoys the complete monopoly of the pasturage, and, consequently, of the wool trade of Spain. Estremadura has suffered most severely from this scourge, from its vicinity to the mountains of Leon and Castille, where the flocks of the Mesta have their summer pasturage; and from and to which they migrate periodically, according to the season.

Scarcely a quarter of the surface of Spain is applied to any profitable purpose; more than three-fifths are devoted to pasturage, and only about a twelfth is occupied by wood. Old Castille and Leon, in spite of all their natural disadvantages, are considered as the granaries of the kingdom, and have their outlets in the north by various ports, from Gijon to St. Sebastian, the principal being Santander and Bilbao. The elevated *campos*, which extend from Logroño to Burgos, and thence on each side of the Arlanza and Pisuerga, and along the Carrion and other streams which water the provinces of Palencia, Valladolid, and Zamora, yield immense quantities of wheat; and further west, on the south of the Douro, the provinces of Toro and Salamanca, may be considered as forming a portion of the richest wheat country in Spain, or perhaps in the world. The crop is often so abundant for a series of years, that the produce of the fields at a distance from the villages is allowed to rot on the ground, the expense of conveying it home being considered more than its value. The means of carriage to the coasts or other profitable markets are exceedingly deficient, nearly the only available means of transport being the backs of mules and asses, or small carts drawn by oxen. The gross agricultural produce of the kingdom was estimated by Miñano, in 1826, at £76,965,000 sterling, and the net produce at £28,403,666; and whatever may be the correctness of these numbers no doubt can be entertained that since the beginning of the present century the agricultural produce has been doubled. The number of beeves in that year, was estimated at 2,944,885; horses, 400,495; mules, 223,646; sheep, 18,687,159; goats, 5,187,668; asses, 641,788; swine, 2,728,283; bee-hives, 1,697,593.

Mines and Minerals.—Another branch of national industry, that of the mines, has of late made considerable progress. Since the cessation of their intercourse with America, the Spaniards have turned their attention to the mineral wealth of their own country; and in almost every instance the working has proved highly profitable. The silver mine of Guadalcanal has been re-opened, and is now worked by a company, who rent it from the government. The newly discovered lead mines in the mountains near Adra and Almeria are in such a state of prosperity, and the ore is so rich and abundant, that although they are wrought almost entirely by manual labour, they produce the mineral at a price with which foreigners cannot compete. The quicksilver mine of Almaden has proved a rich treasure to the government; it seems to be inexhaustible, and its produce is considered as one of the ordinary items of the public revenue, and one of the principal securities for public loans. Another mine of the same metal has been recently discovered near Cordova, and promises to be as abundant. Coal of excellent quality abounds in several districts; and the recent discovery of a large deposit of that mineral in Majorca, not far from the sea, promises to be a new source of wealth to the people of that island. Nearly all the cobalt used in Europe is the produce of the extensive mines recently discovered in Galicia.

Manufactures and Trade.—The coasts of Spain are inhabited by a race of men whose character is quite distinct from that of the inhabitants of the inland provinces. Indolence is generally assumed to be the national characteristic of the Spaniards; but it is peculiar to the latter class; the former being, on the contrary, bold and enterprising. The mountaineer is also distinguished by many good qualities, which only require some exciting cause to bring them into action; and in commercial and manufacturing pursuits, these qualities have been turned to some account. Barcelona and the coasts of Cataluña are enriched by a flourishing trade; that carried on by St. Felice de Guixols extends as far as the Antilles and the Black Sea. The excellent dock-yards of Lloret, Tosa, Malgrut, and Arenys de Mar afford great facilities to the trade of these towns, which are noted for their excellent shipbuilding. Their female, infirm, and aged population are actively employed in the manufacture of blonde and stockings by machinery. Palamos, Rosas, San Felice, and the neighbouring ports trade in cork, which is a source of great wealth to Gerona. This neighbourhood is also the centre of the operations of the most enterprising race of smugglers. From Vinaroz, Murviedro, Peniscola, and Valencia, from the Balearic islands, wines, oils, and oranges are exported to distant places; and an active commerce is also carried on from Alicant, Carthagena, Almeria, Malaga, Cadiz, and other

southern ports. On the northern coast, Coruña is by its commercial transactions closely connected with America; Ribadeo and Viviero trade with Hamburg, Danzig, and Riga; Ferrol, one of the great naval arsenals, is also a commercial town. The pilchard fishers of Vigo cover the waters of Galicia with their vessels, and convey the produce to all parts of southern Europe. Gijon, Bilbao, Santander, and San Sebastian have, from a remote period, exported to France and America the wool and iron which are brought from the neighbouring provinces. The staple commodity of Valencia is silk, which forms an important branch of trade in its raw state, and also affords profitable employment to the home manufacturer. The looms of Valencia produce tissues, gauzes, and ribands, which rival in beauty those of France. The silk manufactures of Talavera de la Reyna and Zaragoza are also in high repute. In the north, Bilbao and Santander; in the south, Seville and Cadiz, are the great entrepots for the exportation of wool, which is also spun and woven in Cataluña, and manufactured into cloth and flannel. In this branch of industry, Barcelona, Manresa, and Castel Tersol also participate. The fine cloth of Zaragoza is in great request. Galicia annually imports 20,000 cwt. of flax, which is conveyed to Santiago, and thence dispersed through the province, to be converted into linen, and then sold in the Castilles. An extensive export of Galician linen is also made to Cadiz, where it is exchanged for French goods and colonial produce. Biscay, Guipuscoa, Galicia, and Cataluña, abound in iron, which is exported to France and America, or consumed in the inland and southern provinces. Bilbao and Cumana are the entrepots for the exportation of iron, and Vittoria for the excellent metal produced in Biscay. The manufacture of arms is carried on to a considerable extent, of which there are two large factories in Biscay; at Albacete and Toledo, swords and other weapons are made; at Segovia, fire arms are manufactured, and at this place, at Seville, and Placencia there are also good founderies. In the vicinity of Ribadeo in Galicia there are numerous forges of iron for the sea service. Seville has an extensive trade in leather, a kind of which, prepared with nut-galls, is that so much sought after under the name of Spanish leather. Ferrol and Vittoria possess a considerable number of tanneries; and the former has an establishment for the preparation of varnished leather. Besides the wines of Alicant and Malaga, and those produced at the mouth of the Ebro, the dark, coarse wines of Murviedro are extensively exported. Reus, Torrento, and some other places on the coast between Valencia and Barcelona, are celebrated for their brandy. Dried fruits are largely exported from Alicant, Malaga, Valencia, Seville, and Gijon. Valencia is noted for its beautiful dyes, and for its manufacture of strong and tasteful cotton fabrics. At Manires, a small town near Valencia, is a manufactory of glazed pottery, which is a monopoly in the hands of a few families, who pretend that their process is a secret handed down from the Moors. The important part, however, is the preparation of the varnish, which resembles gilding; the pottery itself is otherwise of no great value. The net produce of commerce and manufactures was estimated by Miñano, in 1826, at about £14,660,000. At present, the foreign commerce of Spain is almost exclusively carried on with France and England, the former taking lead, oil, dried fruits, wool, cork, corn, silk, quicksilver, and other minor articles; the latter taking the greater part of the wool, nearly all the best wines of the southern coast, most of the barilla, fresh and dried fruits, cork, quicksilver, kid and goat skins, sumach, and sometimes corn and silk. All the commercial regulations are opposed to the introduction of English produce, but favourable to that of France, which takes comparatively little in return. This, however, is greatly remedied by the smugglers, through whose means large quantities of English goods are introduced into the country.

INLAND COMMUNICATION.—The *caminos reales*, or king's highways, are not numerous, nor are they all kept in good repair. From Madrid there are two good roads to Burgos, one passing through Valladolid, and the other through Aranda de Douro. From Burgos the road is continued by Vittoria and Irun to France. Both of these roads are, or used to be, in tolerable repair. From Valladolid an excellent road has been made, by Palencia and Reynosa, to Santander. There are also two roads to Bilbao, one by Miranda, the other by Vittoria. To the north-west there is a camino real through Galicia to Coruña and Ferrol, but in such a state of disrepair as to be in many places impassable for loaded carriages or carts. There is only one camino real leading to Estremadura. To the south there is one leading over the Sierra Morena to Seville, through Andujar and Cordova. The whole line is in a pretty good state of repair; but the portion from Seville to Cadiz is not upon the same footing as the rest. To the east there are two great roads, one through the province of Cuença to Valencia; but it has long been in such a wretched state as to be entirely abandoned to the muleteers and ox carts of the villagers. The other, which is in a better condition, goes far to the south of the direct line, passing through Albacete and Almanza, in Murcia. This is the route of the diligence and heavy waggons to Valencia and Barcelona. The direct line to Barcelona is by Guadalaxara and Zaragoza; but although there is a camino real in that direction, it is in such a state as not to admit of carriages travelling beyond a walking pace, nor of the passage of loaded waggons. In Cataluña the roads are comparatively numerous and excellent, and there are stage coaches between most of the important towns. In some places lines of road, several leagues in length, have been com-

pleted for many years; but they are nearly useless, in consequence of the original plans having been abandoned, from want of industry and funds. The other roads which are traced on the maps may be divided into three classes, viz. — 1. Roads which have been originally made and covered with road metal; 2. Roads across the plains and through the valleys, formed by the tracks of the country carts, and which have only in a few places been artificially constructed; 3. The mule roads or paths, worn by the feet of the mules travelling over the mountains during a long series of years. The first class have almost all been neglected, and are scarcely passable even by light carts. The second, being without bridges, are rendered impassable by the rains. The third are numerous, and well adapted for passing the mountains; but as they not only cross many torrents, but also in some cases pass along the beds of the torrents, they are always during the rainy season very dangerous, and liable to frequent interruption. The revenue applicable to the construction and repair of the roads is derived partly from tolls and partly from local taxes. The caminos reales are under the charge of a board established in Madrid; but no funds seem to be appropriated to roads of the second and third classes, though small tolls are levied from passengers upon them. In Biscay and Navarre the roads are under the superintendence of the provincial administration, and are more numerous, better constructed, and more carefully kept than in the rest of the country.

With respect to *canals*, no country of Europe experiences the want of this means of conveyance more than Spain, though apparently there are in none greater facilities for constructing them. But the nature of the country, the imbecility of the government, and the ignorance and poverty of the people, have hitherto opposed insuperable obstacles to their formation. Still, however, some advances have been made; and, besides the numerous canals for irrigation, which are found in Cataluña, Valencia, Aragon, Murcia, and Granada, there are several of more importance destined for navigation.

The *Imperial Canal*, begun by the Emperor Charles V., extends along the right bank of the Ebro, from Tudela to near Zaragoza, about 66 miles. It is nine feet deep, and passes the river Xalon by an aqueduct 4260 feet long.

The *Canal of Castille* commences at *Alar-del-Rey*, in the province of Burgos, where it receives the waters of the Pisuerga, and extends to the Carrion, near Calahorra, under the name of the North Canal. From the Carrion it turns southward, passes Grigots, El Seron, Rio-Seco, Villa-umbrales, and Bercerril de Campos, and Sahagun, terminating at Paredes de Nava. From El Seron a branch extends in the direction of Palencia and Valladolid, under the name of the South Canal, and is open as far as El Soto de los Albures near Dueñas, in the province of Palencia. The total length is about 77 miles, with a depth of six feet. It is intended to be extended northward to Golmir, near Reynosa, and southward to Segovia, passing by Palencia and Valladolid.

The *Canal of the Manzanares* commences at Madrid, and was to extend to Vacia-Madrid, at the confluence of the Manzanares with the Jarama. The length executed is about eleven miles.

The *Canal of Murcia*, of which only a small part has been executed, commences at the low source of the Guardal, and extends about 19 miles, with a depth of 6 or 7 feet. It was intended to reach Carthagena, a total length of 130 miles, with a tunnel at Toparcs 13,841 yards long.

The *Canal of Albacete*, in Murcia, formed between 1805 and 1808, for the purpose of draining the marshes near that town, commences about 6000 yards to the westward of the town, and extends to the Jucar, near Baldeganga, a distance of 24 miles; 7½ feet deep.

The *Canal of the Alfaques*, or of *San Carlos*, was intended to give a harbour to Tortosa, in Cataluña, and has a length of nine miles; but it was so ill executed, that soon after it was finished its banks fell in, and rendered it useless.

The *Canal of Guadarama*, undertaken for the purpose of conveying building materials to Madrid, has been executed to the extent of about twelve miles, and has now been abandoned.

Several other great canals have been projected, the principal of which are, the great irrigation canal of Seo d'Urgel, in Cataluña; that which is to form a junction between the Ebro and the Douro; the Baetican canal, to render the Guadalquivir navigable, as it formerly was, from Cordova to Seville; and the works necessary to render the Tagus navigable, from Aranjuez to Lisbon.

ADMINISTRATIVE DIVISIONS. — By a royal decree, dated 30th November 1833, Spain, including the Balearic and Canary Islands, was divided into forty-nine civil provinces, named after their respective capitals, except the islands and the provinces of Navarre, Biscay, Alava, and Guipuscoa, which retain their ancient names. Thirty-six of these provinces belong to the Crown of Castille, and thirteen to that of Aragon; but they are all placed under the charge of intendants or subdelegados of the Minister of the Interior. For military purposes, Spain is divided into twelve great captain-generalates *(capitanias generales)*, and five smaller governments or commands; and in each civil province there is a military governor subordinate to the captain-general. These military provinces are: — *New Castille*, *Old Castille*, *Galicia*, *Estremadura*, *Andalusia*, *Granada*, *Valencia*, *Cataluña*, *Aragon*, *Navarre*, *Guipuscoa*, and the *Balearic Islands*. The five smaller governments are those of *Mahon* and *Iviça*, dependent on the captain-general of Majorca; *Campo de Gibraltar*, in the province of Cadiz; *Ceuta*, on the coast of Africa; and the *Canary Islands*. The kingdom is likewise divided into three maritime departments, the chief stations of which are the *Isle de Leon*, *Ferrol*, and *Carthagena;* in each of which there is a captain-general of the marine, with various subordinate officers. For judiciary purposes, Spain is divided into twelve Royal Courts, or Superior Tribunals, whose titles are: — The *Royal Chancery of Valladolid*, whose jurisdiction extends over Castille and Leon, and also decides in the last resort, the civil and criminal business of Biscay; the *Royal Chancery of Granada;* the *Royal Council of Navarre*, at Pamplona; the Royal Audiencias of *Galicia*, at Coruña; of the *Asturias*, at Oviedo; of the *Canaries*, at Las Palmas; of *Estremadura*, at Caceres; of *Aragon*, at Zaragoza; of *Valencia*, at Valencia; of *Cataluña*, at Barcelona; and of *Majorca*, at Palma. These judiciary provinces are divided into *Corregidorias*, each under the jurisdiction of a Corregidor, to whom are subordinate a certain number of *Alcades Majores*, and other officers.

TABLE of the FORTY-NINE PROVINCES of SPAIN, with their Area and Population, as published by Government in a Royal Decree of 3d August 1837; and the Names of their Principal Towns.

Provinces.	*Area in Square Miles.*	*Population.*	*Cities and Towns.*
1. NEW CASTILLE.			
Madrid,	1,315	369,126	MADRID, Florida, Casa del Campo, Getafe, Leganes, Chinchon, Alcala de Henares, Colmenar, El Escurial.
Guadalaxara,	1,946	159,044	Guadalaxara or Guadalajara, Siguenza, Brihuega, Trillo, Molina.
Toledo,	8,774	276,952	Toledo, Aranjuez, Ocaña, Consuegra, Madridejos, Talavera de la Reyna (Queen's Talavera.)
Cuença,	11,304	234,582	Cuença, Requena, San Clemente, Huete.
Ciudad Real,	7,543	277,788	Ciudad Real, Almaden, Almagro, Manzanares, Val de Peñas, Almodovar, El Viso, Calatrava, Nuestra Señora de Guadalupe.
2. OLD CASTILLE.			
Burgos,	7,674	224,407	Burgos, Aranda de Duero, Lerma.
Logroño,		147,718	Logroño, Calahorra, Alfaro, Agreda, Ezcaray, Haro.
Santander,		166,730	Santander, Laredo, Santillana, Santoña, Espinosa.
Oviedo,	3,686	434,635	Oviedo, Aviles, Gijon, Navia.
Soria,	4,076	115,619	Soria, Osma.
Segovia,	3,466	134,854	Segovia, San Ildefonso, or La Granja.
Avila,	2,569	137,903	Avila, Medina del Campo, Arevalo, Peñaranda.
Leon,	5,891	267,438	Leon, Astorga, Sahagun, Ponferada, Bembire, Rueda.
Palencia,	1,733	148,491	Palencia, Torquemada, Saldaña, Cervera, Carrion.
Valladolid,	3,279	184,647	Valladolid, Medina del Rio Seco, Tordesillas, Peñafiel.
Salamanca,	5,626	210,314	Salamanca, San Estevan de la Sierra, Ciudad-Rodrigo, Bejar, Espeja.
Zamora,	3,562	159,425	Zamora, Toro, Fermoselle, Morales, Benavente, Monbuey, Puebla de Sanabria.
3. GALICIA.			
Coruña,	15,897	435,670	Coruña, Santiago de Compostella, Muros, Padron, Betanzos, Ferrol.
Lugo,		357,272	Lugo, Mondoñedo, Ribadeo.
Orense,		319,038	Orense, Ribadavia, Monterey, Oencia.
Pontevedra,		360,002	Pontevedra, Tuy, Bayona, Vigo.
4. ESTREMADURA.			
Badajos,	14,329	316,622	Badajos, Albuquerque, Xeres de los Cavalleros, Olivença, Zafra, Merida, Llerena, Cabeza de Buey.
Caceres,		231,398	Caceres, Cazar de Caceres, Alcantara, Valencia, Placencia, Coria, Trujillo or Truxillo.
5. ANDALUSIA.			
Seville,	8,989	367,303	Seville, Guadalcanal, Cazalla, Constantina, Utrera, Carmona, Ecija, Ossuna, Estepa.
Huelva,		133,470	Huelva, Ayamonte, Moguer, Palos, Niebla, Aracena.
Cadiz,		324,703	Cadiz, Xeres de la Frontera, San Fernando, Caracca, Puerto Real, Medina Sidonia, Puerto de Santa Maria, Arcos de la Frontera, Rota, San Lucar de Barrameda, Tarifa, Algeziras, San Roque.
Cordova,	4,159	315,459	Cordoba or Cordova, Baeza, Bujalance, Lucena, Fuente, Ovejuna, Hinojosa, Carlota, Montilla, Priego.
Jaen,	4,603	26,000	Jaen, Andujar, Linares, Alcala la Real, Beaza, Baylen, Ubeda.
6. GRANADA.			
Granada,	9,622	376,974	Granada, Alhama, Loja or Loxa, Ugijar, Huescar, Baza, Guadix, Almuñecar, Motril, Torviscon.
Almeria,		231,789	Almeria, Adra, Dalias, Mujacar, Velez el rubio, Velez el Blanco.
Malaga,		338,412	Malaga, Marbella, Velez Malaga, Ronda, Grazalema, Antequera, Archidona, Estepona.
7. VALENCIA.			
Valencia,	7,683	451,685	Valencia, Grao, Chelva, Liria, Murviedro, Cullera, Alcira, San Felipe (Jativa), Montesa.
Alicant,		318,441	Alicant, Onteniente, Denia, Gandia, Alcoy, Orihuela, Monovar, Elche, Elda.
Castellon-de-la-plana,		199,022	Castellon de la Plana, Segorbe, Alcora, Vinaroz, Benincarlo, Villarcal, Peniscola, Morella.
Murcia,	7,877	280,694	Murcia, Carthagena, Lorca, Archena, Alhama, Caravaca, Molina, Moratalla, Totana.
Albacete,		180,763	Albacete, Chinchilla, Hellin, Villena, Almanza, Alcaraz.
8. CATALUÑA.			
Barcelona,	12,180	442,473	Barcelona, Villafranca de Panades, Igualada, Manresa, Monserrat, Mataro, Tarrasa, Vich.
Tarragona,		233,477	Tarragona, Reus, Valls, Tortosa, Alfaques or San Carlos.
Lerida,		151,322	Lerida, Corvera, Solsona, Cardona, Urgel.
Gerona,		214,150	Gerona, Santa Maria de Arens, Figueras, Rosas, Olot, Ripoll, Castillo de Ampurias.
9. ARAGON.			
Zaragoza,	14,726	304,823	Zaragoza (Saragossa), Daroca, Calatayud, Tarazona.
Huesca,		214,874	Huesca, Jaca, Barbastro, Ayerbe, Mequinenza.
Teruel,		214,988	Teruel, Alcañiz, Caspe, Albarracin.
10. NAVARRE,	2,450	221,728	Pamplona, Estella, Tudela, Corrella, Tafalla.
11. GUIPUSCOA.			
Alava,	1,082	67,523	Vittoria, El Ciego, Salvatierra, Orduña.
Biscay,	1,267	111,436	Bilbao, Somorrostro, Portugalete, Durango.
Carry forward,	181,689	11,660,934	

Provinces.	Area in Square Miles.	Population.	Cities and Towns.
Brought forward,	181,689..	11,660,934	
Guipuscoa,.....	622....	104,491..	San Sebastian, Fuente Rabbia (Fontarabia), Mondragon, Los Passages, Placencia, Tolosa, Vergara, Oñate, Ernani, Segura.
12. BALEARIC ISLANDS.			
Palma,.....	1,757....	229,197..	Palma, Manacor Pollenza, Soller, Falanichc, in Majorca; Ciudadela and Mahon, in Minorca; Iviça or Ibiza.
Canary Islands,..	3,220....	199,950..	Laguna, Santa Cruz, Las Palmas, Orotava, &c.
	187,288..	12,194,572	

Spain was formerly divided into the *kingdoms* of Galicia, Navarre, Aragon, Valencia, Murcia, Granada, and Leon; the *principalities* of Asturias and Cataluña or Catalonia; the *lordship* of Biscay (Viscaya;) and the *provinces* of Andalusia, Old Castille, New Castille, and Estremadura. Of these, Aragon, Valencia, Murcia, Cataluña, and the Balearic Islands formed the kingdom of Aragon; all the rest belonged to the kingdom of Castille and Leon.

§ *Cities and Towns.*

MADRID, the capital of the kingdom, in New Castille, in north lat. 40° 25′ 7″; and west long. 3° 33′ 8″, is situate on some sandy hills, on the left bank of the Manzanares, about 2220 feet above the level of the sea. It is nearly 8 miles in circuit, of a compact form, and contains about 8000 houses; 146 churches, chapels, oratories, and other religious edifices; 18 hospitals, 13 colleges, 15 academies, 15 public libraries, 6 prisons, 15 granite gates, 85 squares and *plazas*, and 50 public wells, which supply the inhabitants with excellent water, brought from the mountains 30 miles distant. The city is almost in the centre of the kingdom, and was declared the capital of the monarchy by an ordonance of Philip II. The modern part of the town may be considered as fine, from its having good houses, straight streets paved with flint, and lined with foot pavements. The Calle de Alcala is reckoned one of the finest streets in Europe, but it is, according to Mr. Inglis, the only fine street in Madrid. Many of the other streets are good, and very many respectable, of tolerable width, and the houses are lofty and well built; but there is no magnificent street but the Calle de Alcala, which runs through the middle of the city, from east to west, passing through the Puerta del Sol, a large open area, where eight of the principal streets converge. As in all the other cities of Spain, the streets have a sombre aspect, arising from the number of convents, whose long reach of wall, with grated windows, and the absence of doors, throw a chill over the mind of the passer by. Before the recent changes, there were sixty-two of these buildings in the city, and in many instances one side of a whole street was occupied by a convent; in the Calle de Atocha there were no fewer than eight; and some of the streets on the outskirts contained scarcely any houses but those dedicated to religion. The whole of the middle classes, and indeed all, excepting people of the very highest rank, live in stories or flats, as they are called in Scotland, each story forming a distinct house. The royal palace, on the banks of the Manzanares, to the west of the city, is a large square pile of building, each of its fronts being 470 feet in length, by 100 in height, all built of white stone, enclosing a court of 140 feet square, and fitted up with the greatest magnificence; but the only other building in the city of any architectural importance is the picture gallery, recently erected, which is equal in extent and perhaps little inferior in excellence to any other in Europe. Every Spaniard is proud of the Prado at Madrid, but, divested of its living attractions, it is not considered by travellers as entitled to much praise. It consists of a spacious walk, at least 2 miles long, from north to south, on the east side of the city, from 200 to 300 yards broad, adorned with rows of trees and several fountains, and is the great resort of all ranks and classes of the citizens in the evenings. There are two other fine walks, the *Paseo de las delicias*, along the Manzanares, on the west side of the city, and the gardens of *Buen Retiro* on the east side, beyond the Prado. Madrid possesses three theatres, and several scientific and literary institutions, among which are the Royal Spanish Academy, the Royal Academy of History, and the Estudios Reales de San Isidro, a kind of University, with sixteen professors. There is no want of libraries. The two largest are the Royal Library, containing about 200,000 volumes, several valuable manuscripts, and a rich collection of coins illustrative of Spanish history; and the Library of San Isidro, which contains about 60,000. There are 13 hospitals for the relief of bodily infirmity, and 10 different institutions for philanthropic purposes, the support of the wretched, and the relief of the poor. The total number of inhabitants is estimated at about 170,000. Their consumption of provisions amounted in 1825 to 230,000 sheep; 12,500 beeves; 70,000 swine; 2256 tons of charcoal; 148 tons of soap; 113,040 gallons of oil; 800,000 bushels of corn; 1,770,000 gallons of wine; 17,700 gallons of snow; 379 tons of candles; and 18,000 bushels of salt. The hotels are of a very inferior description, and strangers consequently have difficulty in obtaining comfortable accommodation. Madrid is probably the most expensive capital in Europe; being situate in the midst of a sterile country, where there is no pasture land, no rivers, scarcely any gardens, and no easy communication with the sea, or with any of the distant or more productive provinces. Notwithstanding these drawbacks the markets are well supplied; and all kinds of meat, poultry, game, vegetables, and fruit may be had of excellent quality: fish and milk are the only scarce articles; fuel, however, is very expensive.

Madrid has no suburbs, and no country seats or villas of the citizens; nor are there in the neighbourhood any forests or orchards, except in the valley of the Manzanares, and a few olive trees at the convent of St. Jeronimo, to the eastward. A hundred yards from the gates all is desert; but at no great distance are the royal residences of *La Casa del Campo*, *La Florida*, *Monglou*, *Zarzuela*, and *El Pardo;* and the more celebrated palaces of *Escurial*, *San Ildefonso* or *La Granja*, and *Aranjuez*. The *Escurial* or *Escorial*, is situate in a desert at the foot of the Sierra de Guadarama, 34 miles northwest of Madrid, and 3683 feet above the level of the sea. It consists of a monastery and a palace, forming together a stupendous mass of building, surpassing in its internal decorations anything of the kind elsewhere to be found. The Escurial was built by King Philip II. in fulfilment of a vow made at the battle of St. Quentin, which he gained in 1557; and consists of a number of square courts built in the form of a gridiron, in honour of San Lorenzo, the martyr, to whose intercession he ascribed his success, and who is said to have been roasted to death on an instrument of that kind. It contains the splendid mausolemn of the Austrian and Bourbon kings of Spain, a fine collection of pictures, a rich library, and a college. It is said to contain 51 bells, 48 wine cellars, 80 stair-cases, 73 fountains, 8 organs, 12,000 windows and doors, 1860 rooms, 1560 oil paintings, and fresco paintings, which if brought together would form a square of 1100 feet. The circumference of the building is 4800 feet, or little less than a mile. *San Ildefonso* or *La Granja*, was built by Philip V. in a finer situation than that of the Escurial, on the north side of the Sierra de Guadarama, two leagues S.E. of Segovia. It is placed in a recess of the mountains, which screen it from the scorching heat of summer, and leave it open to the refreshing breezes from the north, at an elevation of 4149, or, according to others, 3791 feet above the level of the sea. The palace is a fine building, fitted

up in the most sumptuous style, and the garden, with its water-works, is said to have cost £7,000,000. There is here also a celebrated manufactory of glass mirrors, which has produced the largest, if not the finest, in the world. *Aranjuez* is situate in a dead level, on the banks of the Tagus, 27 miles S. by E. of Madrid. The palace is a large and fine building, and the grounds form one of the most delightful retreats attached to any palace. Every spot of ground is laid out with the utmost care, and the whole space is occupied by gardens, woods, orchards, and innumerable avenues; and here and there the waters of the river are trained into cataracts. The object sought has been to cover the level tract, in which the palace is situate, with the richest verdure, and to assemble in it all the natural productions congenial to the climate. This has been effected by irrigation, which, aided by a warm climate, produces an endless succession of beautiful vegetation.

Toledo, the ancient capital of Spain, and the see of the ecclesiastical primate, is situate upon a hill of considerable elevation, nearly surrounded by the Tagus, 40 miles S.W. of Madrid. The city is old, ill-built, and in a state of decay; it still possesses some remains of its ancient splendour, in the Alcazar, the palace of the Moorish kings, which was repaired and embellished by Carlos I., but is now falling to ruin; and the cathedral, one of the largest and most magnificent gothic temples in existence, with a treasury of gold, silver, and jewels, valued at £10,000,000 sterling. It is served by forty canons, fifty prebendaries, and fifty chaplains. There are besides, in the city, 38 parish churches, and 36 convents and monasteries. This city was long the stronghold of the monks and priests of Spain; and the recent downfall of the church, though it may have cleared it of part of the ecclesiastics who swarmed in it, must have been attended by the loss of their revenues, upon which the support of the population mainly depended. There are in the city a lunatic asylum, a well-frequented university, and a college for girls, the daughters of officers and employees, who are well educated and maintained at the expense of Government, till they marry or enter a convent. Near the city is the sword manufactory, which has been long celebrated for the excellence of its blades. Population about 15,000. The revenues of the archbishop amounted, about sixty years ago, to £70,000 a-year, but latterly they fell to £40,000. *Alcala de Henares*, 12 miles E. by N. of Madrid, a small town with 5000 inhabitants, noted for its university, formerly the second in the kingdom, a military academy, and two libraries. *Guadalaxara*, 27 miles E. by N. of Madrid, is noted for some fine buildings, a bridge ascribed to Julius Cæsar, and numerous cloth-works. Population 7000. *Ciudad Real*, the capital of La Mancha, contains about 8000 inhabitants, and has a celebrated fair for asses and mules. *Val de Peñas*, in the same province, is noted for its excellent wine; and *Almaden* for its mines of mercury, considered to be the richest in Europe. They formerly employed about 900 workmen, and produced annually about 22,000 quintals of mercury; but they were, a few years ago, pillaged by the troops of the pretender Don Carlos, and overflowed with water, for the purpose of depriving the Queen of this source of revenue. *Guadalupe*, 37 miles E. of Truxillo, a small town in the mountains, with a sanctuary of Nuestra Señora (our Lady), which is visited by crowds of pilgrims.

Old Castille.—VALLADOLID, an episcopal city at the confluence of the Esgueva and Pisuerga, 100 miles N.N.W. of Madrid, was formerly very flourishing, but is now much decayed. It is the seat of a university, with eight colleges, the residence of the Captain-general of Old Castille, and the seat of the royal-chancery of Castille and Leon. There are also a royal chateau, the birthplace of Philip II., and of several other kings, and a magnificent cathedral.—Population about 21,000. At *Simancas*, a small town, 10 miles S.W. of the city, the general archives of the kingdom of Castille are preserved, in a fine building erected for the purpose. *Burgos*, an archiepiscopal city, with about 12,000 inhabitants, irregularly built upon a hill, near the Arlanzon, abounds with churches and convents, and contains an idle and poor population: 60 miles N.E. of Valladolid. *Logroño*, a town of 8000 inhabitants on the right bank of the Ebro, 160 miles N.N.E. of Madrid; has several manufactures, and an important yearly fair. *Calahorra*, an episcopal city, with 4000 inhabitants, on the Ebro, S.E. of Logroño, is only noted for the fertility of its environs, and the ruins of its ancient splendour. *Palencia*, 26 miles N.N.E of Valladolid, an episcopal city, with a cathedral, one of the largest and finest in Spain.—Population 11,000. *Medina del Rio Seco*, 20 miles N.W. of Valladolid, is noted for a battle in which the Spaniards were defeated by the French, in 1808. *Soria*, 125 miles N.E. of Madrid, is a fine town, with about 5400 inhabitants, and is noted for its trade in wool. A few miles to the north of Soria is the site of *Numantia*, so renowned for its obstinate defence against the Romans. *Segovia*, 45 miles N.W. by N. of Madrid, is an ancient Celtiberian city, embellished by the Roman Emperor Trajan, and several Moorish kings. It contains a large Roman aqueduct, in good preservation, a large cathedral, and the Alcazar, a fine Moorish palace, full of remarkable curiosities, a mint, and a royal military school. It has been long celebrated for its cloth, is the see of a bishop, and has about 13,000 inhabitants. *Avila*, 70 miles W. by N. of Madrid, is an episcopal city, in a valley 3485 feet above the level of the sea. It has 4000 inhabitants, a university, and several remains of antiquities and monuments of the middle ages. *Medina del Campo*, 35 miles S.W. of Valladolid, has a college, an economical society, and several good buildings. *Zamora*, an episcopal city, with a fine bridge over the Ducro. Population 10,000. *Salamanca*, an episcopal city upon the Tormes, over which there is a bridge of 27 arches, partly built by the Romans, and partly by Philip V. Numerous buildings, of every age and style, have procured for it the name of Little Rome; but a great part of them were destroyed during the late war. It has a fine cathedral, and a celebrated university, once considered among the first in Europe, but now so much decayed as to be reckoned only the tenth among the fifteen universities of Spain.—Population 14,000. *Ciudad Rodrigo*, a fortified town on the Agueda, near the frontiers of Portugal.—Population 4,300. *Santander*, a flourishing seaport on the coast of the Bay of Biscay, connected with the interior by a superb road recently made.—Population about 19,000. *Oviedo*, the capital of the Asturias, and the cradle of the Spanish monarchy, an episcopal city, with a university and 10,000 inhabitants. *Gijon*, a considerable seaport town of the Asturias, formerly the residence of King Pelayo, has an institute founded by Carlos IV., for teaching mathematics, physics, and navigation.—Population 6000. *Leon*, an episcopal city, with a cathedral, considered as the finest church in Spain; 80 miles N.W. of Valladolid.—Population 5500. *Astorga*, a small episcopal city, with some Roman antiquities; 30 miles S.W. of Leon.

Galicia.—CORUÑA (CORUNNA), a flourishing commercial and fortified town, with one of the best harbours in Spain, and 23,000 inhabitants, great part of whom are employed in the manufacture of cigars, linen, hats, and cordage. Near it are *Betanzos*, a small town, with a good harbour, and a considerable trade, noted for its fisheries and light wines; and *Ferrol*, one of the three great naval arsenals of Spain, with a very fine natural harbour, defended by formidable batteries. It has also a school of navigation, and 13,000 inhabitants. *Santiago de Compostella*, a large archiepiscopal city, with 23,000 inhabitants, and a great cathedral, dedicated to the two apostles St. James the Great and St. James the Less, which is a great resort of pilgrims. It is also the seat of a flourishing university, and has numerous manufactures of linen, silk stockings, images, and chaplets. *Lugo*, an episcopal city, with a fine cathedral and town-house, Roman walls, thermal waters, and about 12,000 inhabitants. *Mondonedo*, an episcopal city, with 6000 inhabitants, and numerous manufactories of linen, and tanneries. *Orense*, an episcopal city on the Minho, noted for its baths, chocolate, and hams; a fine cathedral, and a magnificent bridge.—Population about 5000. *Pontevedra* has a good harbour, a considerable trade, and a fishery of sardines.—Population 5,000. *Tuy*, an episcopal city, and *Vigo*, a sea-port, are both possessed of considerable trade, and contain about 6000 inhabitants each.

Biscayan Provinces. — SAN SEBASTIAN, a fortified seaport town on a peninsular promontory, the residence of the Captain-general of Guipuscoa, and a place of considerable trade. It withstood a memorable siege from the British army in 1813, when it was taken by storm, and reduced to ashes. It has since been entirely rebuilt on a regular plan, and is now one of the finest towns in Spain.—Population 9000. *Vittoria*, the chief town of the province of Alava, is a fine city in an inland plain, 1777 feet above the level of the sea, with several good buildings, and considerable trade and industry.—Population 12.000. It is celebrated for a great victory gained in June 1813, by the British and Portuguese army over the French. BILBAO, the capital of Biscay, situate on the river Ibaicabal, 10 miles from the sea, is a fine town with 15,000 inhabitants, and one of the most commercial towns in the kingdom. It is the great entrepot of the Spanish wool for exportation. *Vergara*, a small town with a college. *Los Passages*, a small town with a harbour reckoned one of the best in Europe, near the French frontier. *Oñate*, a small town with a university and iron forges. *Durango*, a small town 17 miles S.E. of Bilbao. *Somorrostro*, a place with the most celebrated iron mines in Spain.

Navarre. — PAMPLONA, the capital, a gloomy and ill-built episcopal city, and one of the principal fortresses of Spain. — Population, 15,000. *Tudela*, a fine episcopal and commercial city, with a college, a bridge of 17 arches across the Ebre, and 8000 inhabitants.

Aragon. — ZARAGOZA (SARAGOSSA), an archiepiscopal city, situate upon the Ebro, which divides it into two parts connected by a bridge of seven wide arches. It is the residence of the Captain-general of Aragon, and the seat of the Audiencia Real. It has a public library, a seminary, several colleges, an economical society, an academy of fine arts, and a university, which holds the third rank in Spain for the number of students. The fine church of Nuestra Señora de Pilar, is celebrated for its sanctuary, which attracts a great number of pilgrims. Its churches formerly surpassed in riches and magnificence all the other churches in Spain; but most of them, as well as the other buildings, were greatly injured during the memorable siege which it sustained against the French in 1808. — Population 43,000. *Tarazona*, a very ancient episcopal city, with 10,000 inhabitants. *Calatuyua* (the Roman *Bilbilis*), an industrious episcopal city on the Xalon, with 9000 inhabitants. *Huesca*, an episcopal city of great antiquity, with a university and several fine buildings.—Population 3000. *Jaca*, a fortified and industrious town, with 3000 inhabitants. *Teruel*, an episcopal city, with an industrious population of 8000. *Alcañiz*, a town with 5000 inhabitants, noted for its wool, cheese, and mines of alum. *Albarracin*, a fortified town on the Guadalaviar, with 2,227 inhabitants, situate in a bleak and barren district.

Cataluña. — BARCELONA, the capital, a large and fine city, is situate on the shore of the Mediterranean Sea, between the rivers Llobregat and Besos, in the midst of a well cultivated and delightful plain, and contains about 120,000 inhabitants, all busily engaged in trade or manufactures. It consists of the Old Town, the New Town, the Citadel, and the suburb of *Barcelonetta*, all surrounded with regular fortifications, on which there is a delightful walk; there is besides the Rambla, a walk scarcely inferior to the Boulevards of Paris. The city is completely commanded by the fortress of Monjuich, on a hill to the southward. The harbour is formed by a vast mole of stonework projecting into the sea. The city possesses four public libraries, eight colleges, and several other scientific and literary establishments. It derived its Roman name of *Barcino* from Hamilcar Barcas, a Cathaginian general, by whom it was founded about 230 B. C. N.W. by W. 26 miles from Barcelona is *Montserrat*, a rugged mountain, containing a magnificent Benedictine convent, and a number of hermitages. The conventual church of Nuestra Señora, (our Lady the Virgin Mary), on this hill, is one of the most frequented places of pilgrimage in Spain. *Turragona*, an archiepiscopal and commercial city, with about 11,000 inhabitants, on the sea coast, S.W. of Barcelona. In the neighbourhood is a majestic tomb, believed to be that of the Scipios, killed in Spain during the second Punic war. *Reus*, 12 miles W. of Tarragona, has grown up within the last half century from a small country town to a flourishing commercial place, with 25,000 inhabitants, and has several important manufactures, the produce of which is exported from its port of Salou. *Tortosa*, an ancient fortified and episcopal city on the left bank of the Ebro, several miles from its mouth, has several fine buildings, some remains of Roman and Arabic antiquities, a good harbour, and 16,000 inhabitants. *Lerida*, an episcopal city, with strong fortifications, and 13.000 inhabitants, in a picturesque situation on the right bank of the Segre. *Cervera*, a small town, the seat of a university, founded by Philip V., 60 miles W.N.W. of Barcelona. *Gerona*, an episcopal city, with 6000 inhabitants, little distinguished for industry; is situate on the Ter, in the north-eastern part of the province, and underwent a memorable siege from the French in 1808, when its fortifications were almost entirely destroyed. *Olot*, 60 miles N. by E. of Barcelona, with 14,000 inhabitants, has a great transit trade. It is surrounded by an ancient volcanic district, shewing fifteen distinct cones and craters, the most perfect of which are in the neighbourhood of the town. *Figueras*, a pretty little town, 20 miles N. E by N. of Gerona, has a citadel, considered to be one of the most remarkable fortresses in Europe. It has bomb-proof casemates capable of holding 6000 men, stables for 5000 horses, and cisterns and magazines sufficient to hold provisions for a siege of eighteen months. Near Figueras, on the Gulf of Rosas, is the small town of *Castello de Ampurias*, situate in the midst of pestilential marshes, on the site of *Emporiæ*, a great Roman commercial city, said to have contained 100,000 inhabitants. *Rosas*, at the entrance of the gulf to which it gives its name, is a small town, but is flourishing and rapidly increasing in the number of its inhabitants. *Cadaques*, a small town, with 2000 inhabitants, to the south of Cape Creuse, and east of Rosas, has a good harbour and a considerable amount of shipping. *Mataro*, on the coast N. E. of Barcelona, is a thriving manufacturing town, with 13,000 inhabitants, who are employed in spinning cotton, weaving silk stockings, laces, handkerchiefs, velvets, &c. *Urgel*, an episcopal city, with 2600 inhabitants, on the Segre, near the frontier. To the north-east of Urgel is *Puigcerda* or *Puycerda*, the chief place of Cerdagne, formerly a frontier fortress, but dismantled in 1678. — Population 1500. *Vich*, or *Vique*, 37 miles north of Barcelona, an episcopal city, in a fertile and well cultivated country, is noted for its linen manufactures, cotton spinning, and for the mines of copper and coal in its neighbourhood.—Population 13,000. *Cardona*, 45 miles N. W. of Barcelona, a small town, noted for a mine of rock-salt dug in a deposit of salt 360 feet thick, and of such hardness as to receive a fine polish. The mine resembles a huge stone quarry, about 12 miles in circuit; and the salt contains not the smallest particle of mould or gravel. The Cardonero, a small mountain stream, flows through it, and for many miles below deposits salt upon its banks. The only access to and from Cardona is by a foot path across the mountains, so difficult as to occupy six days between Cardona and Barcelona.

Valencia. — VALENCIA, the capital, a large and fine city on the banks of the Guadalaviar, situate in a fertile and delightful plain, is one of the most industrious towns in Spain. It possesses a university, the most frequented in the kingdom, and several other scientific and literary establishments; and, next to those of Madrid, its presses produce the greatest number of books. Its cathedral is considered to be one of the finest churches in Spain. — Population 66,000. The Mall and the Alameda are two fine public walks; from the latter of which a fine road leads to *Grao*, a town of 5000 inhabitants, with an insecure anchorage, which serves as the port of Valencia. *Liria*, 21 miles N. W. by W. of Valencia, is a considerable town, with an industrious population of 13,000. *Murviedro*, 17 miles N. of Valencia, an ill built, ugly town, with 6000 inhabitants, stands upon the site of the ancient *Saguntum*, the taking of which

by Hannibal was the ostensible cause of the second Punic war. *San Felipe* or *Jativa*, 40 miles S.S.W. of Valencia, is a large flourishing town, with 15,000 inhabitants. *Alicant*, a moderate sized, but very commercial town, noted for its wines, with a strong citadel, a harbour, and a roadstead, frequented by a great number of vessels.—Population 25,000. *Alcoy*, N.W., and *Elche*, S.W. of Alicant, two large inland towns, with a population of 18,000 and 19,000. *Orihuela*, 30 miles S.W. of Alicant, a large town situate in a plain called the Garden of Spain. Its varied industry, its university, its academy, libraries, and other public establishments, and the residence of the bishop of Alicant, make it a place of considerable importance.—Population 26,000. *Castellon de la Plana*, 40 miles N. of Valencia, a flourishing commercial town, near the sea-coast.—Population 15,000. *Segorbe*, an ancient episcopal city, 37 miles N.W. of Valencia, with 6000 inhabitants. *Peniscola*, a small fortified town in the N.E. part of the province.

Murcia.—MURCIA, the capital, and the residence of the bishop of Carthagena, is a large city on the Segura, with a fine cathedral, an episcopal palace, five colleges, a botanical garden, &c. and 36,000 inhabitants. It was very much damaged by earthquakes in 1829. *Lorca*, 40 miles S.W. of Murcia, a busy manufacturing town, with 40,000 inhabitants. *Carthagena*, on the south coast of the province, a very ancient fortified episcopal city, situate on the shore of a gulf which forms one of the finest harbours in the Mediterranean. It was formerly one of the principal stations of the Spanish military navy, and contained basins, building slips, and magazines for building, repairing, and fitting out vessels. The population amounted to 36,000; but the fleet having ceased to exist, Carthagena will probably decline. *Albacete*, a small town, noted for its cattle fair.—Population 9000. *Chinchilla*, a commercial town, with 10,000 inhabitants. *Almanza*, a well built town, with 5000 inhabitants, and a great annual fair, 65 miles N. of Murcia. In 1707, during the war of the succession, the French gained a great victory near this town, over the allied armies, who supported the Archduke Charles of Austria.

Granada.—GRANADA, an archi-episcopal city, situated on the Darro, near its confluence with the Xenil, in a plain renowned for its beauty and fertility, 2314 feet above the level of the sea. The plain is about 10 miles long by 7 wide, and is kept in a state of perpetual verdure by irrigation. Granada was the capital of the last Moorish kingdom in Spain, and still contains the palace of the kings, the famous Alhambra, which is reckoned one of the finest existing specimens of Moorish architecture; and the Xeneralife, their pleasure-house; but no description can convey to the reader any just idea of these buildings. The cathedral, also a fine building, contains the tombs of Ferdinand and Isabella, the conquerors of Granada; of their daughter Joanna, the first queen of Spain; and of her husband, the Archduke Philip of Austria. The university is reckoned the sixth in rank; and the population, twenty years ago, was reckoned at 80,000; but the trade having now completely failed, idleness and poverty generally prevail. Near Granada is the town of *Santa Fe*, which originated in an entrenched camp formed by Ferdinand and Isabella, when besieging the city. *Motril*, 36 miles miles S. of Granada, is a flourishing town, in the midst of fertile fields, where the sugar-cane is cultivated. There are also in the neighbourhood productive salines and lead mines, and the rum made here is reckoned equal to that of Jamaica.—Population 12,000. *Ugijar*, 50 miles S.E. of Granada, a small town with a population of 3000, is noted for the industry of its inhabitants, who are of Moorish descent. In the neighbouring district of the Alpujarras, the Iberian Company have established the most extensive lead mines in Europe. *Alhama*, 30 miles S.W. of Granada, is noted for its baths, and is reckoned one of the highest towns in Europe above the level of the sea. *Guadix*, 35 miles E. of Granada, is a bishop's see, with several potteries, and 9000 inhabitants. *Loxa* or *Loja*, west of Granada, on the Xenil, a busy manufacturing town, with 14,000 inhabitants. *Almeria*, a very ancient episcopal city, at the head of a large bay, with a good harbour, and considerable trade in wine and other produce.—Population 19,000. *Velez Rubio* and *Velez el Blanco*, two neighbouring towns, about 60 miles N.N.E. of Almeria, the former with 11,000 inhabitants employed in the manufacture of common cloth, and the latter, with 7000, and noted for a magnificent alcazar, or Moorish palace. *Malaga*, on the coast S.W. of Granada, is a fine episcopal and fortified city, situated at the head of a bay, in the midst of a delightful country, celebrated for its wines, raisins, almonds, and other fruits, the exportation of which forms the principal article of its flourishing trade.—Population 60,000. *Velez Malaga*, also on the coast, to the eastward, is remarkable for the unusual fertility of its territory, and the rich produce of its agriculture, of which exquisite wines, sugar, oil, and liqueurs form the principal part.—Population 14,000. *Ronda*, 94 miles W.S.W. of Granada, a large town with 18,000 inhabitants, divided into two parts by a frightful chasm, which is crossed by two bridges, and through which the river Guadalavin or Guadiaro flows. The town is noted for the manufacture of arms. *Antequera*, N.E. of Ronda, a busy town, with 20,000 inhabitants. *Marbella*, on the coast between Malaga and Gibraltar, is a fine seaport town, with considerable manufactures and fisheries.—Population 4500.

Andalusia.—SEVILLE, a large city on the left bank of the Guadalquivir, 230 miles S.W. by S. from Madrid, and 100 from the sea. It was the Roman *Hispalis*, and is reckoned one of the most ancient towns in Europe, and is still one of the richest and most important in Spain. Among the many public buildings which adorn Seville, the most remarkable are, the cathedral, a large and fine church, partly Gothic and partly Roman, with a large organ of 5400 pipes, and a Moorish square tower 350 feet high, surmounted by a giralda or weather-cock, from which it takes its name; the magnificent palace of the archbishop; the alcazar, or ancient palace of the Moorish kings; the lonja or exchange, where the records of the Spanish navigators are preserved; the tobacco manufactory, a vast building inclosing twenty courts, erected in 1757 at the cost of £390,000 sterling. Seville likewise possesses several scientific and literary establishments, among which are the university, one of the best frequented in Spain, with nine colleges, &c. It was formerly the great entrepot of Spanish commerce with America; but though the Guadalquivir is still navigable up to the city, yet the trade has disappeared, the principal part of it now consisting of the export of oranges, with which about 40 vessels are annually freighted. Next to Toledo and Murcia, among the larger cities of Spain, superstition and bigotry had the firmest footing in Seville; and the morals of the people are consequently very low; idleness, indolence, and vice being the general characteristic of all classes. The river is crossed by a bridge of boats; and on the right bank, about 5 miles from the city is the village of *Santi Ponce*, built on the site of the ancient *Italica*, the birth-place of the Emperors Trajan, Adrian, and Theodosius, and of the poet Silius Italicus. CADIZ, a large sea-port town, built at the extremity of a long promontory, projected into the sea from the Isla de Leon, 54 miles S.S.W. of Seville, in north lat. 36° 31′ 53″ and west long. 6° 28′ 10″. Nature and art have contributed to render it one of the strongest fortresses in Europe. The tongue of sand by which it is joined to the island, is about 5 miles long, and in some parts only from 200 to 300 yards broad. About a mile and a half from Cadiz the tongue is crossed by a magnificent fortress called the Cortadura, erected in 1812, which presents a formidable range of batteries mounted by 140 guns. Before entering Cadiz another strong battery must be passed, so that the city may be considered as almost impregnable on the land side. The streets are clean, and many of them wide, and there is no want of finely situate, commodious, and even elegant houses; but the chief external charm of Cadiz is found in the delightful promenade which the ramparts afford. There are few objects of curiosity to visit, no antiquities, and few public buildings worthy of notice. The principal of these are two cathedrals, the old one remarkable for nothing but its treasures and relics, and the new one chiefly interesting for a long time as a splendid ruin. It was begun about a century ago, and was meant to be in the most gorgeous style of the Composite order, but the funds intended for its erection failed, or were diverted to other purposes, and the work was falling rapidly to decay; it is now in progress of

completion, the bishop having for many years devoted the whole of his revenues to this object. Cadiz was several years ago declared a free port, but it is nevertheless in a state of decline, without trade, and one-third of the houses are said to be unoccupied.* The ramparts have a circuit of 7500 Spanish yards, and comprise four castles,— San Sebastian, San Lorenzo, Santa Catalina, and Santi Petri. The city contains 3710 houses, 223 streets, 34 plazas, most of them little better than courts, 28 churches, 39 public buildings, 5 gates, and 2 theatres. The population, in December 1837, amounted to 58,525. On the eastern side of the bay of Cadiz is the sea-port town *Puerto de Santa Maria*, with 18,000 inhabitants, at the mouth of the river Guadelete, and, a few miles inland, the town of *Xeres* or *Xeres de la Frontera*, with 34,000; the latter celebrated for the manufacture, and the former for the export of *sherry* wine. The annual average exported in 1835-6-7, was 28,627 butts, each containing 600 bottles, or altogether 17,176,200 bottles, or 1,431,350 dozens. Great part of the wine is exported to America, and yet the total amount exported is below the consumption of England alone! Xeres is also celebrated in history as the place where Rodrigo, the last Gothic king of Spain, was defeated and killed by the Moorish invaders in A. D. 771. The Isla de Leon is separated from the mainland by the *Rio de Santi Petri*, which is too wide and deep to be forded, but is crossed by the bridge of Suazo, which is defended by formidable works, close by *San Fernando* or *Isla de Leon*, a town with 18,000 inhabitants, a fine observatory, and a marine school. To the northward is the new town of *San Carlos*, and a little farther, at the northern end of the river or strait of Santi Petri, is the great naval arsenal of *La Caracca*, now almost deserted, and fast falling to decay. At the southern entrance of the river, in the ocean, is the insulated rock and castle of *Santi Petri*, believed to be the site of the celebrated temple of the Phœnician Hercules. The navigable passage to La Carracca, through the Bay of Cadiz, is commanded by the two forts of *Matagorda* on the mainland, and *Puntales* on the island. *Puerto Real*, formerly a fine town on the south side of the bay, with a magnificent harbour, a careening basin for ships of war, extensive salines and flourishing fisheries, is now almost in ruins. The other remarkable places in the neighbourhood of Cadiz are:— *San Lucar de Barrameda*, at the mouth of the Guadalquivir, with considerable cotton spinning-works, tanneries, manufactories of liqueurs, fisheries, and 17,000 inhabitants; *Medina Sidonia*, with 9000 inhabitants; *Chiclana*, charmingly situate on a hill, and the great resort of the people of Cadiz in summer.—Population 7000. *Vejer*, a small town on the summit of the hills, terminating at *Cape Trafalgar*, off which the combined fleets of France and Spain were completely defeated by the British fleet under Lord Nelson, 21st October 1805. *Rota*, a small town north of Cadiz, is noted for wine; *Conil*, for its rich fisheries; and *Torre Barrosa* (the clay or mud tower) on the coast, 16 miles S.S.W. of Cadiz, where a battle was fought in 1811 between the British and French. At the southern extremity of Andalusia are the towns of Algeziras, Tarifa, San Roque, and Gibraltar. *Algeziras* is a small town on the west side of the bay of Gibraltar, deriving its name from a small island off the shore. *Tarifa*, a fortified town at the southern extremity of Europe, on the Strait of Gibraltar, at its narrowest part, where it is only 12 miles across. *San Roque*, a small fortified town, serving as a sort of guard-house upon the approach to Gibraltar, from which it is separated by a low isthmus. *Gibraltar*, an inconsiderable town of 12,000 inhabitants, built upon the west side of the celebrated Mount Calpe, one of the pillars of Hercules, which rises abruptly from the sea to the height of 1439 feet, and is defended at every accessible point by the most formidable batteries. The mountain extends nearly three miles in length from north to south, and three quarters of a mile in its greatest breadth, terminating in the sea at Europa Point, and connected with the mainland by a flat sandy isthmus 1000 yards wide, but only a few feet above the level of the sea. The north and east sides form a line of almost perpendicular precipices, but the south and west sides fall in rugged slopes, with occasional flats or terraces. It derives its name from Tarek, a Moorish General, who first built a fort here in the eighth century. It was recovered from the Moors in 1462 by the Spaniards, from whom in turn it was taken, in 1704, by the English, who have retained it ever since. It is now so completely fortified as to be deemed impregnable, and has always a garrison of about 3000 British troops. The least accessible parts of the mountain are peopled by a colony of monkeys, the only animals of the kind in Europe; they are protected by Government. *Ecija*, 54 miles E.N.E. of Seville, a large town with an industrious population of 35,000. *Ossuna*, 50 miles E. of Seville, noted for its manufactures of hemp, and its situation at the entrance of one of the most fertile valleys of Andalusia.— Population 15,000. *Huelva*, a seaport town, and fishing station, from which Seville and other places are supplied with fish. —Population 8000. *Palos* and *Moguer*, two small seaport towns on the same bay, from the former of which Columbus sailed on his first voyage to discover the new world; 60 miles west of Seville.

CORDOVA or CORDOBA (the Roman CORDUBA), a large ill-built, thinly inhabited, and decayed episcopal city, on the right bank of the Guadalquivir, 73 miles N.E. by E. of Seville. It was once the capital of the Mahometan dominions in Spain, and still retains a splendid monument of their wealth and taste in the great mosque, once reckoned second only to that of Mecca, but now converted into a Christian cathedral. In the year 759, it is said to have contained a population of 300,000 persons, but the number now remaining scarcely exceeds 20,000, who live entirely by agriculture; for, with the exception of a very trifling manufactory of linen, there is no trade of any kind. Situation is the only glory that now remains to Cordova; and that is truly delightful.

Andujar or *Anduxar*, a fine town on the Guadalquivir, east of Cordova, with considerable manufactures of earthenware, china, and soap.— Population 10,000. *Baylen*, 20 miles N.E. by E. of Andujar, is noted for the surrender of a French army, under General Dupont, to the Spaniards, under Castaños, in 1811. *Jaen*, an episcopal city, with 19,000 inhabitants, 22 miles S.E. by S. of Andujar. *Baeza*, also an episcopal city with 11,000 inhabitants. *La Carolina*, 30 miles N.E. of Andujar, is a fine clean town, the capital of the German colonies established in the Sierra Morena by the minister Olavides, in 1767, a line of policy which, if followed out, might have proved of the highest importance to Spain; but malevolence and superstition combined to defeat his object of introducing, to any great extent, an industrious and moral population into these wild and lawless districts.

Estremadura.— Badajos, a fortified town on the Guadiana, with 13,000 inhabitants, principally noted for the siege which it sustained in 1811-12, against the British army, who at last took it by storm. At *Albuera* or *Albuhera*, 16 miles S. by E. of Badajos, a sanguinary battle was fought, in 1811, between the British troops, covering the siege, and the French, under Marshal Soult, who endeavoured to raise it. *Olivença*, a busy and commercial fortified town, with 10,000 inhabitants. *Merida*, an ancient city, of 6000 inhabitants, with numerous remains of Roman and Moorish antiquities, and a fine bridge over the Guadiana. *Caceres*, an ancient but small city, nearly in the centre of the province, with 10,000 inhabitants. *Alcantara* (Arabicé, *Al-cantarat* or *Al-kantrah*, the bridge), a small town, with 3000 inhabitants, noted for a fine Roman bridge over the Tagus, said to have been built in the time of the Emperor Trajan, and kept in good preservation till the late war of independence, when it was blown up to prevent the passage of the French across the river. It also gives name to a renowned order of knighthood. *Placencia*, a small well-built episcopal city, with several Roman antiquities, and 7000 inhabitants. *Almaraz*, a small town of 1000 inhabitants, with a fine bridge over the Tagus. *Truxillo*, a town of 4000 inhabitants, on an affluent of the Tagus, south-east of Alcantara. *Guadalcanal*, in the south-eastern corner of the province, in a gorge of the Sierra Morena, is noted for a silver mine, which was once very productive.

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* Petition to the Cortes.— *Journal of Statistical Society of London*, I. 352.

Balearic Islands. — PALMA, the capital of the province, a large fortified episcopal city, in Majorca, with a good harbour, a university, and 34,000 inhabitants. *Mahon*, a fortified commercial town in Minorca, the residence of the military governor, with one of the finest natural harbours in Europe. *Iviça*, the capital of the island of the same name, is a small episcopal city.

The CANARY ISLANDS, though usually considered as belonging to Africa, form, nevertheless, one of the provinces of Spain. They are situate on the north-west coast of Africa, about 900 miles from Cadiz, between 27° and 30° N. lat., and 13° and 19° W. long. The principal islands of the group are, *Gran Canaria*, *Teneriffe*, *Palma*, *Gomera*, *Hierro* or *Ferro*, *Fuerteventura*, *Lanzarote*, *Gruciosa*, *Alegranza*, *Santa Clara*, *Lobos*, *Rocca*. They are all of volcanic formation, hilly and rugged, and their coasts often precipitous. The mountain ridge, *El Cumbre*, in Gran Canaria, is 6,648 feet, *Sancillo*, in the same island, 6,070 feet, and the *Peak of Teneriffe* raises its snow-capt summit to the height of 12,042 feet, above the level of the sea. But the eastern islands of Fuerteventura and Lanzarote are almost as dry and sandy as the neighbouring coast of Africa. Lanzarote is mountainous, volcanic, and has many extinct craters. Fuerteventura is, on the contrary, less mountainous than any of the others. Their principal articles of produce are wine, barilla, and orchilla, which form considerable articles of export. They enjoy a delightful and very equable climate, but are subject occasionally to severe droughts, which, more particularly in the eastern islands, last occasionally for two or three years. The population is said to have amounted, in 1828, to 196,517; by the Government decree of August, 1837, it is estimated at 199,150; but, within these few years, many thousands of the people have emigrated to South America. These islands were known to the ancients as the Fortunate Islands; but were almost forgotten till the fourteenth and fifteenth centuries, when they were re-discovered and conquered by the Spaniards, after a brave resistance on the part of the original possessors, the Guanches, who are now completely extinct, though some of their mummies or dried bodies are still preserved. The principal towns are *Laguna*, 8000 inhabitants, *Santa Cruz*, 9000, and *Orotava*, in Teneriffe; *Ciudad de las Palmas*, in Grand Canary, a large handsome town, with 18,000 inhabitants; *Santa Maria de Betancuria*, in Fuerteventura. *Alegranza*, the north-eastern point of the Canaries, is a small island, consisting of a mass of lava and cinders, rising 939 feet above the sea, and forming a well-defined crater two-thirds of a mile across; the bottom being cultivated for barilla.

The only remaining foreign possessions of Spain are the presidios of *Ceuta*, *Peñon de Velez*, *Alhucemas*, and *Melilla*, on the north coast of Africa; *Manilla*, and some other portions of the Philippine islands; with *Cuba* and *Porto Rico*, in the West Indies. *Ceuta* is a fortress on a Peninsula, opposite Gibraltar, with a bad harbour, and 8000 inhabitants. It is the residence of a bishop, and of the governor of the presidios. It is also used as a place of confinement for convict criminals.

KINGDOM OF PORTUGAL.

This state is composed of two kingdoms, PORTUGAL and ALGARVE. The former is believed to have derived its name from a place named *Calé*, beside which there was constructed a harbour called *Puerto de Calé*, afterwards contracted to *Portucale*. This port is now believed to be the city of Oporto, and the original kingdom was confined to the neighbourhood of that place. Don Alonzo, king of Castille and Leon, having conquered this province from the Moors, bestowed it, with his daughter in marriage, upon an illustrious stranger, Don Henriquez, who appears to have been a grandson of the first Duke of Burgundy. His son, Don Alonzo Henriquez, after a great victory over the Moors at Ourique, in 1139, was proclaimed king by his army on the field of battle; and he and his successors ever after renouncing all subjection to the crown of Castille, gradually extended their conquests southward, till the kingdom reached its present limits. *Algarvé* (Arabicé, *Al-garbh*, the west) originally extended from Cape St. Vincent to Almeria in Granada, and comprehended likewise the opposite coast of Africa, on which account the Kings of Portugal used to assume the title of Kings of the Algarves on both sides of the sea, though they never possessed more than a small corner of the African continent.

The existing kingdom of Portugal and Algarve is situate between 36° 55′ and 42° 13′ N. latitude, and 6° 15′ and 80° 55′ W. longitude. Its greatest length is from north to south about 350 miles, and its greatest breadth, 143; its superficial area is about 40,875 square miles. It is bounded on the north by Galicia, on the east by Leon, Estremadura, and Andalusia, and on the west and south by the Atlantic Ocean. It has a coast line of nearly 500 miles. The north coast is at first low, but afterwards becomes rugged and steep; in Beira it becomes again flat, sandy, and marshy; in Estremadura it is in one part steep, in another almost a dead level, and very unsafe; in Alemtejo it is low, and beset with rocks and shallows. At Cape St. Vincent it is high and rocky, but to the eastward it sinks into low sandy downs.

For GENERAL ASPECT, RIVERS, MOUNTAINS, CLIMATE, &c., See *anté* pp. 531–537.

PEOPLE. — The people of Portugal are of the same lineage as the Spaniards, and speak a dialect of the same language; but they cherish a deep-rooted national antipathy to their neighbours, and exhibit in many points a strong contrast to them. "Strip a Spaniard of all his virtues," says the Spanish proverb, "and you make a good Portuguese of him;" but, says Dr. Southey, "I have heard it more truly said, Add hypocrisy to a Spaniard's vices, and you have the Portuguese character." The moral and economical condition of the nation is indeed very low, and there is little prospect of a speedy amendment. The Portuguese are generally a robust, though not an industrious people; they are enterprising and persevering, patient in adversity, excessively attached to their religion and customs, and generally retain a

high sense of loyalty to their sovereign, and of submission to their spiritual superiors. Their language is derived from the Latin, to which it is indebted for a great proportion of words, but these are mixed with many of Arabic and Teutonic origin. In the construction of its sentences it bears some affinity to the Castillian, but the pronunciation is less guttural; and it contains many words that seem peculiar to itself, the origin of which it is difficult to trace, though it is probably to be found among some of the tribes on the coast of Barbary.

In 1798, the population of Portugal was estimated at 3,683,000; in 1801, another estimate made the amount 2,931,930; and in 1836, the estimate was 3,061,684; shewing an increase of only 129,754 in thirty-five years. The population was distributed as stated in the following table:—

District of Aveiro,		214,610
....	Beira,	98,519
....	Bragança,	114,501
....	Braga,	308,576
....	Castello Branco,	91,444
....	Coimbra,	227,080
..	Evora,	77,593
....	Faro,	29,562
....	Guarda,	165,461
District of Lisbon,		438,106
....	Lamego,	233,866
....	Leiria,	117,144
....	Portalegre,	82,410
....	Porto,	299,055
....	Santarem,	174,480
....	Villa Real,	161,430
....	Vincenna,	152,003
		3,061,684

EDUCATION.—In 1822, the statistics of education were as follows:—The university of Coimbra, founded in 1279, with six faculties, a preparatory college, and attended by 1600 students; 883 elementary schools; 322 Latin schools; 21 Greek and rhetorical schools; and 27 seminaries for theoretical and moral philosophy. The total number of scholars, besides university students, was 31,280. To these are to be added the following establishments:—the marine and royal academy at Oporto; the academy at Lisbon; the Lisbon royal school for engineering, artillery, and drawing; and the military school at Luz, near the capital. At Lisbon there was also a royal college for nobles, and royal schools for the Arabic language, drawing, architecture, and statuary; an institution for instruction in copperplate engraving, an academy for music, and some others. Surgery is taught at the university of Coimbra, and in several royal schools; at St. Joseph's hospital in Lisbon, and in hospitals at Oporto, Elvas, and Chaves. There were also several other academies for instruction in science, geography, Portuguese history, marine affairs, navigation, artillery, fortification; an institution for the encouragement of science and literature at Lisbon; an academy for history and antiquities at Santarem; and an academy for scientific instruction at Thomar. There were seven botanic gardens; twelve museums of natural curiosities, open to the public; twelve collections of coins and other antiquities; eight observatories; a royal library at Lisbon, with 80,000 volumes; and the university library at Coimbra, with 60,000.

RELIGION.—The Portuguese were formerly, without exception, ignorant and bigoted Roman Catholics, addicted to superstition and intolerance; and for many ages the whole nation well deserved the appellation bestowed by the Pope upon their king, of His *Most Faithful* Majesty. Other religions are now tolerated; but no Portuguese has, we believe, been yet known to dissent from the national faith. The supreme head of the clergy is the Patriarch of Lisbon; beside whom there are two archbishops, those of Braga and Evora, and fourteen bishops. In 1822, there were 132 nunneries, with 2980 nuns, and 346 monasteries, containing 5830 monks besides servants, pupils, and novices. But infidelity has now usurped the place of the ignorance and blind devotion by which the Portuguese were specially characterized. By the constitution, no male religious houses are permitted; the regular clergy have been abolished; the monks and friars have been driven from their princely mansions to live on a small allowance, and their estates and revenues have been confiscated to the crown. The secular clergy, the only class now permitted, never had much influence upon the people; and even the little they had is now almost gone.

GOVERNMENT.—The Spanish insurrection, which broke out in the Isle de Leon in 1820, was speedily followed by one in Portugal. An extraordinary Cortes assembled and proclaimed a constitution similar to that which the Spaniards adopted in 1812, but still more democratic; for it admitted only one chamber, elected by universal suffrage, and invested with the whole legislative and a great part of the executive power. Amendments might be suggested by the king upon a law voted by the Cortes; but if the National Assembly confirmed its opinion a second time, it became law without the royal sanction. The king had not the power to prorogue or dissolve the Cortes, which met and separated at fixed periods. Three years afterwards,

an insurrection, headed by Don Miguel, the second son of the King, overturned this new constitution, and in May 1823, his father, Don John VI., protested against all that had been done while it prevailed. After the death of John, in 1826, his eldest son and heir, Don Pedro, Emperor of Brazil, abdicated the crown of Portugal in favour of his daughter Donna Maria da Gloria, and gave to the Portuguese a charter which re-established the ancient Cortes. According to this act, the legislative power is vested in the King and the Cortes, who are divided into two chambers; the chamber of the Peers, named by a king, who are unlimited in number, and whose dignity is hereditary or for life; and the chamber of Deputies, elected for periods of four years, by provincial electors, who are themselves named by the primary assemblies of parishes. In 1828, Don Miguel, whom his brother had appointed regent during the Queen's minority, usurped the throne, and proclaimed himself absolute king; but Don Pedro, who had been obliged to abdicate the throne of Brazil, invaded Portugal in 1833, recovered the kingdom for his daughter, and restored the constitution of 1826. This, however, lasted only till September 1836, when the garrison and national guard of Lisbon proclaimed the constitution of 1820, which they compelled the Queen to accept, with only such changes as the Cortes might think proper to make. Portugal is thus a very limited monarchy, or to speak more correctly, a democratic representative republic, with an hereditary chief magistrate, possessing very limited powers, and exercising the functions of royalty only by and with the counsel of responsible ministers.

PRODUCTIVE INDUSTRY.— Portugal is behind almost every other nation of Europe in agriculture; and the various improvements which are elsewhere general have been here slowly and but recently introduced. The districts best cultivated are the valleys of the Minho, those of the Oporto wine company along the Upper Douro, and some parts of Tras os Montes and Beira; the rest of the kingdom remains comparatively uncultivated. Where the soil is subjected to proper culture, abundant crops of wheat, barley, maize, rice, and rye are produced; but they are not sufficient to supply the consumption. Artificial meadows are almost unknown, except in Minho. The cultivation of the soil, however, has of late rapidly extended, and hemp and flax are raised of excellent quality. Wine is produced in great abundance, chiefly in the northern provinces; the quantity usually made is about 80,000 pipes of red, and 60,000 pipes of white. Chestnuts, almonds, oranges, lemons, and citrons are also profusely raised, and, with onions and garlic, form no small proportion of the food of the people. Olive-trees are plentiful, and their oil forms an important article for home consumption, and is exported to a considerable extent.

Mines appear to have been wrought by the Carthaginians in this part of the Peninsula; and mines of gold and silver were wrought by the Romans. During the last century, lead ores were worked near Mogadouro, in Tras os Montes, and in the vicinity of Longroiva on the banks of the Rio Prisco. In 1628, a silver mine was wrought in Tras os Montes. Mines of Plumbago occur near Mogadouro, and iron mines in the same country near Figueira and Torre de Moncorvo; from which the iron forge of Chapacunha is supplied. In Estremadura there are two very old establishments of the same kind, one near Thomar, and the other near Figuero dos Vinhos. On the frontier of that province and of Beira are situate the mines of red oxide of iron, from which these articles are supplied. Iron, indeed, is one of the most abundant minerals in Portugal. The mountains near Oporto everywhere give indications of copper and other ores, and at Conna is a deposit of cinnabar. There are also in different places mines of antimony, bismuth, and arsenic. The sands of some of the rivers are washed for the gold which they contain, and it is said that in this way large quantities have been collected; but none of the streams now yield a quantity much above the value of the labour expended in collecting it. There is only one gold mine, that of Adissa, near Setubal, the annual produce of which does not exceed the average of twenty pounds weight. There are two coal mines; one near Figueira, and the other near Oporto. The country abounds with the most beautiful marbles, but they are little wrought, on account of the expense of bringing them to market. Precious stones are also found. There are quarries of limestone, gypsum, slate, freestone, millstone, and black agate in various parts of the kingdom; and immense beds of pyrites and mareasites, potters' and common clay, and salt-pits are met with. But neither the mines nor the fisheries are carefully attended to. If the former were wrought, their produce might form important articles of trade; and the capabilities of the latter, if brought into operation, would render the importation of fish unnecessary.

The *manufactures* of Portugal are comparatively unimportant, but the country has

in this respect been generally underrated. Cottons are manufactured at Alcobaça and Thomar; woollens, at Guarda; and linens, at Guimaraens. The best goods made in the kingdom, as compared with those of other countries, are the cambrics, shirting and table linens, and sewing threads. Glass is manufactured at Leiria; and silk, paper, and other articles elsewhere. In Lisbon there are manufactories of arms, cordage, hats, chocolate, earthenware, tin, copper, lace, mats, ribbands, soap, silk, cottons, with distilleries, tanneries, sugar-refineries, and foundries. The Portuguese display considerable skill in working in gold and silver; and their taste in cabinet work is said to be now much improved. Generally speaking, they manufacture most articles of ordinary necessity with more or less skill.

The separation of Brazil from Portugal, together with the loss of her Indian possessions, have reduced the commerce of this country to a mere fraction of what it was, when her ports were the medium through which much of the produce of the East and the West passed to other countries. Political events have also materially contributed to depress her foreign trade. Till 1820, it was still very considerable; but since that time it has sunk into comparative insignificance. The chief articles of export are wine, lemons, oranges, figs, almonds and other dried fruits, salt, oil, sumach, wool, and cork. The chief imports consist of wheat and other grain, dried cod, salt-meat, butter, cheese, horses, beeves, mules, and other animals; medicinal drugs and dye-stuffs, linseed-oil, planks and other kinds of prepared wood, iron, steel, lead, tin, brass, copper, charcoal, tar, pitch, flax, hemp, and silk. The internal trade, which at the best is unimportant, suffers from the want of good roads. Canals are unknown, and the few navigable rivers are liable to interruptions; so that until proper roads are made, or canals formed, the inland commerce must continue to be very limited.

ADMINISTRATIVE DIVISIONS.—According to the project of a new territorial division of the kingdom, adopted by the Cortes in 1823, Portugal, with the Açores and Madeira, were to be divided into twelve provinces, containing twenty-six comarcas, or shires, and each subdivided into several julgados, or cantons; but the subsequent troubles have prevented this arrangement from being carried into effect. The six great provinces whose names appear in maps, are not administrative, ecclesiastical, or military, but simply geographical or popular divisions, and it is as such only that we give them here with their principal towns, as stated in the following table:

Provinces.	*Cities and Towns.*
ESTREMADURA, . .	LISBOA (LISBON), 260,000; Torres Vedras, 3400; Castanheira, 700; Alemquer, 2600; Leiria, 2000; Alcobaça, 1300; Thomar, 3700; Ourem, 3100; Chao de Couce, 1300; Santarem, 7800; Setubal, 14,800; Oeiras, Campo Grande, Bemfica, Bellas, Cascaes, Queluz, Mafra, 3000; Ericeira, Villa-franca, 4600; Alhandra, Caldas, Chamusca, 3000; Cintra, 3700; Batalha, Peniche, Pombal, 4800; Pederneira, San Martinho, Pedrogao-grande, Abrantes, 5000; Sardoal, Porto de Moz, Aguda, Gollegan, Torres Novas, 4200; Salvaterra de Magos, Cezimbra, 4200; Almada, 4200; Aldeagallega, 3500; Alcacer do Sal.
ALEMTEJO, ...	Evora, 10,000; Beja, 5400; Ourique, 2400; Villa Viçosa, 3500; Elvas, 10,000; Portalegre, 6100; Crato, 1200; Aviz, 1400; Estremos, 5300; Montemor o Novo, Moura, 3800; Serpa, 4600; Cuba, Messejana, Odemira, Mertola, Villa nova de mil Fontes, Portel, Alterdo Chao, Campo maior, 4500; Mourao, Castello de Vide, 5700: Marvao, Niza, Sartao, 3300; Benavente, Coruche, Jerumenha.
BEIRA, ...	Coimbra, 15,000; Arganil, Aveiro, 4100; Feira, 1600; Viseu, 9200; Lamego, 8900; Pinhel, 1700; Trancoso, 1200; Guarda, 2400; Linhares, Castello Branco, 5700; Figueira, 6400; Miranda de Corvo, 3900; Louzan, Penella, Goes, Mira, 6000; Ilhavo, 7300; Souza, Ovar, 10,400; Oliveira do Azemeis, Penalva, San Joao de Arcos, Oliveira do Conde, Arouca, 5500; San Martinho dos Mouros, 4800; Priva, 6600; Arnellas, Almeida, San Joao de Pesqueira, Covilhan, 6400; Monteigas, Celorico, Fundao, Fornos, Monsanto, Sarzedas.
MINHO OF ENTRE DOURO E MINHO,	Braga, 14,400; Porto, 70,000; Penafiel, 23000; Guimaraens, 6000; Viana, 8000; Barcellos; 3900; Valença, 1600; Tibaes, Prado, 6500; San Joao da Foz, 3300; Povoa del Varzini, 5700; Pedrozo, 3500; Canavezes, Amarante, Caldas do Geres, Ponte de Lima, Santa Martha do Douro, Espozende, Villa do Conde, 3100; Eixo, 3100; Caminha.
TRAS OS MONTES, .	Miranda, 600; Moncorvo, 1600; Villa-real, 4000; Bragança, 3700; Vimioso, Mirandella, Santa Martha de Penaguido, Peso da Regoa, Chaves, 5200; Montalegre.
ALGARVE, ...	Faro, 8400; Tavira, 8600; Lagos, 6800; Silves, Lagoa or Alagoa, 3000; Loule, 8200; Castro-marim, Villa-real, Villa nova de Portimao, 3260; Albufeira, Monchique, Sagres.

1. *Estremadura.*—LISBOA (LISBON), the capital of the kingdom, is a large straggling city, built on several hills with the interjacent valleys, on the right bank of the estuary of the Tagus. The newest part of the city, which occupies the site of the buildings destroyed by the earthquake in 1755, is laid out in regular streets which cross each other at right angles, and are lined with good houses, and contains two large open squares, the Praça do Rocio, and the Praça do Commercio, the latter having its south side open to the river, its other three sides being occupied by the exchange, the custom-house, the India house, the intendancy of the marine, the royal library, and other establishments, with a bronze equestrian statue of King Joseph I. in the centre. The Praça do Rocio contains the palace and prisons of the Inquisition, now used as the offices of the ministry, and a great number of elegant

shops and coffee-houses. The greater part of the rest of the city consists of narrow, winding, dirty streets. The public buildings present little that is interesting or attractive. Of the 246 churches only 3 are deserving of notice, the cathedral or basilica of Santa Maria, San Roque, and the church of the Coraçao de Jesus, noted for the boldness of its dome. There are three royal palaces, the Ajuda, a regular building which, when finished, will be one of the largest in Europe; the Bemposta, only used for public audiences; and that of Necessidades, where foreign princes are lodged. The residences of the nobility are also very splendid; and some of the richer merchants have houses, which, in appearance, rival those of the higher orders; but the habitations of the lower classes are miserable, and disgusting from their extreme filth. Lisbon possesses an academy of sciences, of considerable repute, a botanic garden, a cabinet of natural history, several large libraries, of which that belonging to the sovereign contains 80,000 volumes, a college for nobles, and several other seminaries. Among other charitable institutions, there is an hospital where the sick of all countries are freely admitted and relieved. The climate is remarkably salubrious, and is resorted to by invalids from northern countries for relief in pulmonary complaints. The markets are profusely supplied. The consumption of animal food is small; fish is abundant and cheap; fruit of every kind, and flour of excellent quality, are easily to be had; and garlic, one of the principal articles of consumption, is furnished in prodigious quantities. The city is profusely supplied with water by the aqueduct of Bemfica, or Agoas livres, upwards of 10 miles in length, which was completed in 1732, after nineteen years' labour, and which will bear a comparison with the greatest Roman works of the kind. The water, which is brought from Montelavar, is strongly impregnated with carbonate of lime, and is thought to be beneficial to invalids. There are few people occupied in manufactures. Some fine woollen cloths are made, some of linen, and a considerable quantity of silk goods. The greatest artistic taste is displayed in jewellery, and the goldsmiths and silversmiths are excellent workmen. The foreign trade is second to that of no city of Europe except London; but we have no authentic accounts of its nature, amount, and value. The domestic productions of Portugal are exported to all the northern countries of Europe, more especially to England; and articles from every country are received in return, partly for home consumption, but chiefly for re-exportation to the Portuguese colonies. The Tagus, above the city, expands into a wide estuary, and forms a most secure and capacious harbour, capable of containing 10,000 sail without danger; but for a space of 5 miles below the city it contracts its breadth to less than a mile, and the bar at the entrance is dangerous to be passed without the aid of skilful pilots. Between the bar and the city, the fort of St. Julian and the strong castle of Belem, in the river, under whose guns all ships must pass, form its principal military defences. Few finer objects can be seen than a panoramic view from the harbour. The smooth expanse of water studded with ships, the vineyards on the surrounding hills, and the straggling city extending 2 miles along the shore, afford a view which can scarcely be equalled.

In the neighbourhood of Lisbon are several places worthy of particular notice. On the banks of the Tagus, 5 miles S.W. from the centre of the city, is the magnificent church and monastery of *Belem*, built by King Emanuel in 1499, on the spot from which Vaseo da Gama embarked for India. It is a noble gothic building, and contains the tombs of many members of the royal family. *Cintra*, 15 miles W. by N. of Lisbon, a small town in a beautiful and picturesque situation, with a delightful climate, is memorable for the convention made there in 1808, by which the French, under Marshal Junot, were allowed to evacuate Portugal. *Mafra*, 9 miles N. of Cintra, is noted for a superb basilica or cathedral, an extensive convent, and a magnificent royal palace, the finest building in Portugal, and one of the finest in Europe, all founded by King John V. *Queluz*, a royal chateau, with no other inhabitants than those attached to the Court, 7 miles W. of Lisbon. *Bellas*, north of Queluz, a fine country town with a villa of the Marquis de Bellas, with a population of 3400, where are chalybeate springs. *Campo-grande*, a small place of 1300 inhabitants, noted for its great silk-works; the ordinary resort of the gentlemen and ladies of Lisbon, particularly on Sundays, for riding. *Alhandra*, a small town with 2000 inhabitants, who make a great quantity of linen, and the bricks which are used in the buildings of Lisbon.

The other places in Estremadura are:—*Caldas da Rainha*, a town with 1300 permanent inhabitants, 47 miles N. of Lisbon, with well-frequented sulphureous baths. A few miles to the south of Caldas are *Roliça* and *Vimiera*, where the first battle between the British and the French armies was fought in August 1808. *Leiria*, a small episcopal city, near which is the village of *Marinha-grande*, with a superb glass-work, which supplies the greater part of Portugal and its colonies with that article. *Batalha*, 70 miles N. by E. of Lisbon, is noted for a magnificent convent, reckoned one of the finest specimens of the Norman-gothic style. *Alcobaça*, 60 miles N. by E. of Lisbon, has a celebrated abbey of the order of Citeaux. South-west of Alcobaça is *Alfubarota*, where the independence of Portugal was established by a victory gained by John I. over the Spaniards, in 1385. *Peniche*, a fortress on the neck of the promontory of Cape Carvoeiro. *Thomar*, 70 miles N.E. of Lisbon, noted for an extensive convent, the residence of the grand master of the order of Christ, and for its manufacture of cotton thread. *Abrantes*, on the right bank of the Tagus, 75 miles N.E. of Lisbon, a considerable town, on a rising ground, commanding the passage of the river, over which there is a bridge of boats. It also contains the church of St. Vincent, one of the largest and finest in the kingdom. *Santarem* (St. Irene), a large fortified town, on a hill which rises almost perpendicularly, and, towering above the plain, presents a position of impregnable strength, on the right of the Tagus, 48 miles N.E. by N. of Lisbon. The distant view is very grand, and the splendour of its numerous churches, monasteries, and convents, is proverbial. *Salvaterra de Magos*, a small town with a royal chateau. *Torres Vedras* (old towers), 26 miles N. by W. of Lisbon, on the river Zizambre, has given its name to a celebrated line of entrenchments, forts, and field-works, constructed in 1811, between the Tagus and the sea, to cover the approach to Lisbon against the French invaders. It also gives the title of Marquis to the Duke of Wellington. *Sobral*, a small town, 9 miles E. of Torres Vedras. All these places are on the right bank of the Tagus, to the north and north-east of Lisbon. To the south of the river are, *Setubal* (St. Ubes), a large sea-port town, 16 miles S.S.E. of Lisbon, containing five churches, eleven monasteries, and about 12,000 inhabitants, on the estuary of the rivers Sado and Maroteca, which forms a fine harbour. It exports wine and oranges, and numerous salines produce great quantities of salt. In the Sierra de *Arrabida*, six miles W. of Setubal, is the celebrated convent of our Lady of Arrabida, containing a miraculous image of the Virgin, which attracts more visitors than all the wild and splendid scenery of the hills. *Cezimbra*, a small town on the same coast, with a harbour, and 4000 inhabitants, who live chiefly by fishing. *Almada*, near the Tagus, S.W. of Lisbon, a large village, with 4000 inhabitants. In the vicinity is the gold mine of Adissa. *Aldeagallega*, a town of 4000 inhabitants, mostly fishermen and mariners, is the ordinary ferry station between Lisbon and Alemtejo.

2. *Alemtejo.*—EVORA, an archiepiscopal city 82 miles E. of Lisbon, only noted for its Roman antiquities, among which are an aqueduct in good preservation, and a temple of Diana.—Population 9000. At *Estremos*, 22 miles N.E. of Evora, is a great manufacture of earthen vases, which, on account of their great porosity, are used throughout Portugal and great part of Spain, for cooling water. *Elvas*, 40 miles E.N.E. of Evora, and 12 miles W. of Badajos, a large episcopal city, the strongest place in the kingdom, and one of the principal fortresses in Europe. *Beja*, a small episcopal city, with several Roman antiquities, 40 miles S. of Evora. Between 20 and 35 miles S.W. of Beja is the *Campo de Ourique*, where Don Alonzo Henriquez was proclaimed King of Portugal by

his army, after a great victory over the Moors, in A.D. 1139. *Serpa*, 20 miles E S.E. of Beja, a considerable town, the inhabitants of which carry on a large contraband trade with Spain. *Villa Viçosa*, 8 miles N.E. by E. of Evora, a small town with a royal palace, and a walled park 10 miles in circuit. *Portalegre*, 50 miles N.N.E. of Evora, an episcopal city, with a considerable manufacture of cloth. To the north-east is the small town of *Marvao*, noted for its fortifications, and for some antiquities lately discovered.

3. *Beira.*—COIMBRA, a large episcopal city on the right bank of the Mondego, 112 miles N.N.E. of Lisbon, built partly on the western side of a steep rocky hill, and partly on a plain contiguous to the river. This city contains the only university of the kingdom, and is the seat of the general directory of public instruction, and of a considerable inland trade. Population 15,000. *Figueira*, a seaport town with considerable trade at the mouth of the Mondego. *Aveiro*, a small episcopal city, 35 miles N.N.W. of Coimbra, formerly an important seaport, and now recovering its ancient prosperity, in consequence of the great labour expended in draining the marshes in its neighbourhood, and in restoring its harbour. *Ovar*, a large commercial town, at the northern end of the great gulf or inlet of Aveiro. *Viseu* or *Viseo*, an episcopal city 48 miles N. of Coimbra, noted for a great annual fair for jewellery and plate, cloth, and cattle. *Lamego*, about 5 miles from the left bank of the Douro, an episcopal city in which the Cortes assembled in the year 1144 to establish the constitution of the kingdom. *Covilhan*, a large town at the foot of the Sierra d'Estrella, with fine woollen manufactures, and a literary society. *Almeida*, a fortified town near the frontier, 24 miles W. by N. of Ciudad Rodrigo, in Spain. It has always been deemed a military post of the greatest importance.

4. *Minho.*—PORTO (OPORTO), a large episcopal city and seaport town in a delightful situation, on the slopes of two hills along the right bank of the Douro, three miles from its mouth. The town is very irregular and straggling, but is second only to Lisbon in the industry of its inhabitants, and in commercial importance; the principal trade consists in wine, both white and red, but chiefly the latter, which is made in this province, and also in Tras os Montes, and exported to the amount of 50,000 to 70,000 pipes a-year. It has also manufactures of hats, silks, linen, and pottery, with ropewalks and ship-yards. The climate is damp and foggy in winter; and the air is then cooler than anywhere else in Portugal, but it seldom freezes. In summer the heat is excessive; most of the plants of Southern Africa grow in the open air, as well as gooseberries, currants, and other fruits of the colder climates of Europe. The river affords a tolerably secure harbour, and is lined by a quay along the whole length of the town. Its mouth is obstructed by rocks and quicksands, which render entrance difficult, but the water is very deep in front of the town. Oporto has 4 suburbs, 11 campos or squares, 14 hospitals or asylums, 90 churches, besides a fine and spacious cathedral rebuilt by Henriquez, first Count of Portugal, A.D. 1105; and 17 monasteries, now uninhabited. On the south side of the river, which is crossed by a bridge of boats, is the *Villa-nova de Gaya*, chiefly inhabited by winecoopers, and containing the immense vaults or lodges where the wine is kept till it is stored. On a rocky eminence above Villa-nova is the vast convent and garden of Serra Cruzios, near which the British army crossed the Douro in 1809. The city, including Villa-nova, and all its suburbs, contains probably about 70,000 inhabitants. *Braga*, a very ancient archiepiscopal city, with an ancient cathedral, the remains of a temple, an amphitheatre, an aqueduct, and other Roman antiquities, and an industrious commercial population, 30 miles N. by E. of Porto. *Guimaraens*, south-east of Braga, a large flourishing town, with manufactures of cutlery, linen, &c., was the first capital of the kingdom. *Caldas do Geres*, noted for its well-frequented mineral baths, north-east of Braga. *Viana*, a large seaport town at the mouth of the Lima, with considerable trade, and flourishing fisheries.

5. *Tras os Montes.*—VILLA-REAL, a large, busy, and commercial town, 50 miles N.E. of Oporto. *Peso da Regoa*, near the right bank of the Douro, south of Villa-real, a small town with a celebrated wine-fair, held every year in February, where business is done to the value of £1,500,000 sterling. *Bragança*, an episcopal city, with important silk manufactures, in the north-east quarter of the province, gives the title of duke and a sort of family name to the existing royal dynasty. *Chaves*, near the northern frontier, has been frequented for its mineral waters since the time of the Romans, and has a bridge built by them.

6. *Algarve.*—FARO, an episcopal and commercial city, with 8000 inhabitants, who are chiefly employed in the fisheries. *Tavira*, a large seaport town, with 9000 inhabitants, mostly employed in fisheries. *Villa-real*, a fine town, built in 1774 by the Marquis de Pombal, on a regular plan, with a harbour at the mouth of the Guadiana. *Monchique*, a small town, 30 miles N.E. of Cape St. Vincent, in a romantic situation, with well-frequented mineral baths. *Sagres*, a small fortified town, near Cape St. Vincent. It was here that the infant Don Henriquez, Duke of Visieu, resided for many years, to prosecute those voyages along the coasts of Africa, which have rendered his name illustrious as the father of modern maritime discovery.

The *foreign possessions* of Portugal consist of:—1. The *Açores*; 3. *Madeira* and *Porto Santo*; 3. The *Cape Verde Islands*, on the west coast of Africa; 4. *Angola*, *Moçambico*, and other territories in southern Africa, *Goa*, *Diu*, and other settlements in the East Indies.

The AZORES, or WESTERN ISLANDS, are situate in the Atlantic Ocean, between 37° and 39° north latitude, and 25° and 31° west longitude. They are nine in number, named *Santo Miguel (St. Michael's)*, *Terceira*, *Pico*, *Fayal*, *Santo Jorje*, *Graciosa*, *Santa Maria*, *Flores*, and *Corvo*, all of volcanic formation, of a rugged rocky surface, and producing abundance of wine and fruits. SAN MIGUEL, 50 miles in length, and varying in breadth from 6 to 10 miles, rises in many parts precipitously from the water, but in others its elevation is very gradual. The more level parts are dotted with hundreds of small hills, many of which are perfect cones, while others are truncated or terminate in crater-shaped tops. The lower parts of the island are cultivated, and exhibit extended fields of Indian corn, wheat, and culinary vegetables. Houses and villages are scattered all along the coast, intermixed with vineyards and orange gardens.—Population, about 80,000. The chief town of the island is *Ponta Delgada*, on the south coast, a well-built town, with 16,000 inhabitants, but possessing a bad harbour, though the best in the island. It contains an English church and burying-ground. *Ribiera-grande*, on the north side of the island, is also a flourishing town, with 12,000 inhabitants. In 1811, a volcanic island rose from the sea, off the west end of St. Michael's, to the height of 300 feet, but disappeared four months after. TERCEIRA is a large compact island, to the west of St. Michael's, and contains the capital of these islands, *Angra*, an episcopal city, with 13,000 inhabitants, a military academy, and other literary establishments. *Horta*, in Fayal, is a large town with 10,000 inhabitants, and the best harbour in the group, the most frequented after those of Angra and Ponta Delgada. *Lagens* in Pico is a small town, but noted for its excellent wine. In its vicinity rises the great *pico*, or snow-capped volcanic cone, to the height of 6900 or even 9000 feet above the level of the sea. The other islands are in no way remarkable. The total population has been estimated at 203,500, thus distributed:—Santo Miguel, 80,000; Terceira, 40,000; Pico, 24,000; Fayal, 22,000; Floras, 14,000; Santo Jorje, 10,000; Graciosa, 7800; Santa Maria, 5000; Corvo, 7000.

MADEIRA is situate off the north-west coast of Africa, in north lat. 32° 30′, and west long. 17°; 35 miles in length, and 10 or 12 broad. It rises, for the most part, abruptly from the Atlantic, and the interior forms a huge mountain mass, interspersed with numerous chasms and precipices, many of which are frightful and inaccessible. The island is liberally supplied with rivulets and cascades, which leap

from rock to rock, through bushes of rosmary, jessamine, laurel, and myrtle. Groves of chestnuts and pine-trees stretch along the declivities of the mountains; the large leaves of the banana wave over the walls, and the splendid palm-trees overtop the houses. Coffee-trees form hedges and copses; while mimosas, protea, and a variety of the most gorgeous and fragant palms rise into tall and stately trees, displaying their far glittering blossoms in the most delightful climate. The air is filled with perfume, and thousands of birds warble in the woods. The uniformity of the temperature is remarkable; the average range of the thermometer is from 68° to 76° Fahrenheit during summer, and from 57° to 65° in winter; the mean annual temperature being 66°. But every desirable degree of temperature can be enjoyed with the corresponding changes of vegetation, on the acclivities of the Pico Ruivo, which raises its snow-capt summit in the centre of the island to the height of 5488, or, according to others, 6165 feet above the level of the sea. Madeira has long been the resort of invalids, especially of consumptive patients. The best season for them is from November to the middle of June. In July, August, and September, the heat sometimes becomes excessive, and the influence of the sirocco has been known to raise the temperature to 130°, a heat sufficient to melt wax. The winters too are sometimes stormy and uncomfortable. The geological structure of the island is likewise an insuperable obstacle to the making of good roads, so that the invalid cannot have the benefit of riding. *Funchal*, the capital, is a large town on the south side of the island, with 25,000 inhabitants; the population of the whole island is estimated at 120,000. The principal produce is wine. Madeira is chiefly composed of volcanic products. About 35 miles north-east is the small island of *Porto Santo*, which consists of tertiary sandstone and limestone, alternating with volcanic strata, and to the south-east of Madeira are some small rocky islets named the *Dezertas*.

ITALY.

ASTRONOMICAL POSITION. — Between 36° and 47° north latitude, and 5° and 19° east longitude.

DIMENSIONS. — Italy consists of two distinct portions, the continental and the insular; the latter including the three large islands of Sicily, Sardinia, and Corsica, with the smaller islands of Malta, Gozo, Comino, and others. The continental portion forms a long narrow peninsula extending from N.W. to S.E., of which the greatest length, from the sources of the river Tosa to Cape Cimiti in Calabria, or Cape Leuca in Otranto, measures about 695 or 700 miles. The breadth is very various; in the north, from the western border of Savoy to the eastern border of Friuli, it measures 365 miles; from Mont Genevre to the mouth of the Po, through the middle of Lombardy, about 275; from the coast of Lucca to the coast of Ravenna, 105; from Piombino to Ancona, 156; from the Gulf of Naples to the Gulf of Manfredonia, 98; and, in some parts of Calabria and Otranto, it does not exceed 20 miles. The superficial area, including the islands, is computed at 122,867 square English miles.

BOUNDARIES. — *Northern:* — Switzerland, Tyrol, Styria, Carinthia, and Carniola. *Western* and *South-western:* — France and the Mediterranean Sea. *Eastern* and *North-eastern:* — the Adriatic Sea, or Gulf of Venice. *South-eastern:* — the Ionian Sea.

GENERAL ASPECT. — The northern border of Italy proper is formed by the stupendous range of the Alps, which extend in a long curve line from the shores of the Mediterranean Sea near Genoa, to the head of the Adriatic. At their southern extremity the Alps are connected with the Apennines, an inferior but still important range, which stretches in a continuous line, parallel to the shores of the Gulf of Genoa, and then through the peninsular part of Italy to the Strait of Messina, dividing the country into two narrow sections of lowland, which extend from the mountains to the adjacent seas. Between the Alps and the Apennines, in Northern Italy, lies the great plain of Lombardy, which is traversed throughout its whole length by the Po, and is watered by innumerable streams which pour down from the adjacent mountains. The length of this plain is about 250 miles from east to west, with an average breadth of 50. Its western portion, at the mouth of the Ticino, has an elevation of about 300 feet above the level of the sea, but it gradually sinks towards the east, and terminates in a low sandy shore. It is thus nearly a dead flat, is of great fertility and well cultivated. Both of the mountain ranges by which it is bordered, rise from the plain with a steep acclivity, and inclose among their branches and offsets many fine valleys, some of which contain large lakes that serve as reservoirs for the water which is turned to account in irrigating the country. The Apennines, in their progress southward, and along the Gulf of Genoa, inclose many narrow but not very fertile valleys; farther south, however, their branches do not always reach the sea, but leave in some places spacious plains, such as the Tuscan and Roman *Maremme*, a singular tract with an undulating surface, which extends along the Mediterranean from Pisa to Terracina, about 200 miles in length, and of various breadth; the *Tavogliera de la Puglia*, which is a wide plain destitute of trees, and of very indifferent fertility; and the volcanic region of *Terra de Lavora*, one of the most fertile districts in the world.

GULFS, BAYS, STRAITS. On the west coast: — *Gulf of Genoa; Gulf of Spezzia*, at the eastern extremity of the Riviera de Levante of Genoa, extends 7 miles inland, forming one of the finest harbours in the world, and of the most exquisite beauty. There is in the midst of this gulf a spring of fresh water rising from the bottom of the sea. *Channel of Piombino*, between Piombino and the island of Elba, the *Strait of Bonifacio*, between Corsica and Sardinia; the *Gulfs of Gaeta, Naples, Salerno, Policastro*, and *St. Eufemia*, on the coast of Naples; and the *Faro* or *Strait of Messina*, between Naples and Sicily. Captain Smyth ascertained the width of this strait at four different places; namely, from Ganziri to Point Pezzo, the shortest distance, 3970 yards; from Messina lighthouse to Point del Orso, 5427; from Faro Point to the Castle of Scilla, 6047; and from Messina lighthouse to the cathedral of Reggio, 13,187. The currents in the strait are numerous and varied. In settled weather there is a central stream which runs alternately north and south, six hours each way, at the rate of from 2 to 5 miles an hour. On each shore there is a counter or returning stream at uncertain distances from the beach, often forming eddies to the central current; but in very fresh breezes, the lateral tides are scarcely perceptible, while the main stream increases, so as to send at intervals slight whirlpools to each shore; but though in light breezes the current may be so strong as to turn a

ship round, there is no real danger; and the proverbial terrrors of the ancients, of passing between Scylla and Charybdis, would appear to have been almost quite imaginary. The celebrated Charybdis, now called Galofaro, is close by the harbour of Messina, and is an agitated water from 70 to 90 fathoms deep, circling in quick eddies, which seem to be caused by the meeting of the harbour and other lateral currents with the main stream. Small craft are sometimes endangered by it, and ships of war wheeled round upon its surface, but with caution there is very little danger or inconvenience attending it. There is a curious aerial phenomenon observed occasionally in this strait, called the *Fata Morgana* by the Sicilians, who believe that it is produced by the fairies. It is a species of mirage, occasioned by a peculiar state of the atmosphere, during which from certain situations the opposite coast is seen pictured in curious forms, as if upon an aerial screen. On the south-east coast:—the *Gulfs of Taranto* and *Squillace;* and the east coast, the *Gulf of Manfredonia*, in the Adriatic Sea.

CAPES.—*Monte d'Argentaro, Cape Linaro, Cape d Anzo, Monte Circello, Miseno, Campanella, Point Licosa, Cape Vatiano*, all on the west coast; *Spartivento, Stilo, Rizzuto, Cimiti, Nau, Leuca*, on the south-east coast; *Rasocolmo, Rama, San Vito, Fero, San Marco, Bianco, Scalambri, Ciarciaro, Passaro*, in Sicily; *Carbonara, Ferrato, San Lorenzo, Palmeri, Sierra Cavallo, Bellavista, Monte Santo, Negra, Comino, Codacavallo, Libano, Falcone, Negretto, Caccia, Maraggio, Mannu, Frasco, Pecora, Giordano, Tenlada, Spartivento, Pula*, all in Sardinia; *Corso, Scandolo, Fieno, Tizzano*, in Corsica.

ISLANDS.—*Sicily; Sardinia; Corsica; Malta, Gozo, Comino, Gorgona*, a small island, 23 miles W. by S. of Leghorn, covered with wood, which serves as a station for the sardel fishermen, and is famous for anchovies. *Capraia*, 20 miles E. of Cape Corso, a small calcareous island, belonging to the King of Sardinia. *Elba*, a large triangular island, 10 miles long, and 3 broad, off the coast of Tuscany, which has been famous, from the most remote antiquity, for its iron mines, which are still wrought. It contains also marble quarries, and produces corn, wine, oil, apples, pears, peaches, prunes, cherries, chestnuts, oranges, and lemons. Population, about 12,000; the principal towns are *Porto Ferrajo*, with 3000 inhabitants; *Porto Longone*, 1500; *Rio*, 2000; and *Marciana*, 1200.—*Pianosa, Monte Christo, Giglio, Giannuti*, small islands to the south of Elba. Giglio contains quarries of granite and valuable marbles; the hills are covered with trees, and the land is fruitful in wine. The *Pontian Islands* of *San Stefano, Vandotena, Zannone, Ponza*, and *Palmarola*, a volcanic group off the Gulf of Gaeta. *Ponza*, the largest, is about 6 or 7 miles long, and 3 broad. *Ischia, Procida*, and *Vivara* islands of volcanic formation, at the north-western extremity of the Gulf of Naples. Ischia is about 5½ miles long, and Monte Epomeo, in the centre, rises to the height of 2513 feet. The island consists of one large and several smaller hills, has many hot springs, and produces figs, oranges, pomegranates, chestnuts, and aloes. Monte Epomeo was formerly a volcano, of which a dreadful eruption is recorded in 1301. The town is on the eastern side of the island, is well fortified, and protected by a strong citadel connected with it by a stone bridge, 400 yards in length, near to which vessels may anchor securely in 3 or 4 fathoms water, fastened to the shore. Procida and Vivara lie between Ischia and the mainland. *Procida* is 2½ miles across, and is partly covered by the town, while the rest produces vines, figs, and oranges. *Vivara* is about a mile in length, and is chiefly occupied by fishermen. Between Vivara and Procida is secure anchorage for vessels in 4 fathoms water, open only to south or south-east winds. *Capri*, at the south-western extremity of the Gulf of Naples, consists of two lofty hills, one of which exceeds 3000 feet in height, with a fertile valley between them, which produces much wine and oil.—The population, 3620, is scattered over the island. The *Lipari Islands*, situate to the north of Sicily, consisting of *Lipari*, 100 square miles, with 15,000 inhabitants; *Volcano*, 15 miles in circuit; *Salina*, 14 miles in circuit, with 4000 inhabitants; *Felicudi*, 9 miles in circuit, with 1100 inhabitants; *Alicudi*, a volcanic cone, with 750 inhabitants. *Panaria*, 7 miles in circuit, with 200 inhabitants; *Basiluzzo*, 1½ in circuit. *Stromboli*.—These islands are all volcanic, with rugged surfaces, their western coasts rising abruptly in precipitous masses, and shelving down gradually to the eastward, and having each a high isolated rock on its northern shore. The climate is highly salubrious, and the weather generally soft and refreshing; but the general porousness of the volcanic soil occasions a scarcity of water. The land is however well cultivated, and yields grapes, currants, figs, prickly pears, corn, cotton, olives, and pulse. A large quantity of wine and currants is annually exported, and an active trade is carried on in bitumen, pumice, nitre, pozzolana, cinnabar, coral, and fish. Alum likewise formed at one time a considerable article of export, but the produce has decreased. Total population of the group 22,350, who are a contented, temperate, and hardy race, and are esteemed excellent sailors. *Lipari*, the chief town, and seat of government, is situate on the south-east side of the island of that name, is a bishop's see, has two havens, a castle, a cathedral, and several other churches. It is healthy, though crowded, irregularly built, and filthy, and contains 12,500 inhabitants. The most remarkable of these islands are *Volcano* and *Stromboli*. The former is lofty, with a great crater 2500 feet high, and not easily accessible, full of volcanic scoriæ, coated over with sulphur, alum, vitriol, and muriate of ammonia, and emits from numerous openings gusts of sulphureous and hydrogenous vapour, accompanied by a noise like that of a waterfall. Fire is observable from it at night, when a pale lambent flame issues from many of the fissures, accompanied by nauseous fumes and vapours. *Stromboli*, the most northerly of the group, is a conical bifurcated mountain 2000 feet high, with an irregular base, about 9 miles in circumference. A crater opens in the side, about a third of the height below the summit, and has continued to burn from the earliest ages, with frequent explosions, and a constant ejection of fiery matter. *Tremiti, Pelagosa, Pianosa*, small islands in the Adriatic, to the north of Monte Gargaro. *Pantellaria, Linosa*, and *Lampedosa*, three small islands in the Mediterranean, between Sicily and Africa. Pantellaria is about 30 miles in circumference, entirely volcanic, and covered with prodigious quantities of lava, pumice, and scoriæ. The valleys, however, produce olives, figs, vines, and cotton. Population about 5000. The other two are desert, but Lampedusa contains a good harbour. They all belong to Naples.

RIVERS.—The Po, the largest river of Italy, rises from the eastern side of Monte Viso, one of the Cottian Alps, and flows, with few great windings, almost due east, into the Adriatic Sea. It has a course of 500 miles; and, though languid in its current in the lower part of its course, is yet so full, generally, in the spring, as to cause extensive inundations on its banks, which would be attended with very destructive effects, but for the great dykes which have been constructed to keep it within its channel. It soon becomes a large river, and is deep enough to float boats and barges at thirty miles from its source; but its current is often so rapid, that the navigation is at all seasons difficult, and not seldom hazardous. Hence, though it passes in its course more than fifty towns, little advantage comparatively is derived from it for the conveyance of merchandise. The vast body of mud carried down by the Po has, in the course of ages, formed a large delta, extending into the Adriatic, which has raised its channel so much, that the water is now about thirty feet higher than the streets of Ferrara, which is only protected by dykes from being overflowed. Its principal affluents on the right are: the *Vraita; Mairo; Tanaro*, with its tributaries, *Bormida, Ellero, and Stura; Scrivia; Staffera; Tidone; and Trebbia*, all in Piedmont; *Nura, Taro, Parma*, and *Lenza*, in Parma; *Crostolo, Secchia*, and *Panaro*, in Modena; the *Reno, Savena, Silaro, Santerno*, and *Senio*, in the Roman State. Its

principal affluents on the left are: the *Cluson*, *Dora Riparia*, *Orco*, *Dora Baltea*, *Sesia*, *Gogna* or *Agogna*, *Terdoppio*, in Piedmont; *Tessin* or *Ticino*, from Lake Maggiore; *Olona*, *Adda*, *Serio*, *Oglio Mella* and *Chiesa*, and *Mincio* from the Lake of Garda, in Austrian Lombardy. The Po near its mouth divides into three principal branches, named the *Po di Primaro*, *Po di Volano*, and *Po di Levante*.

The VAR, MAGRA, and VAGRA, in Genoa; SERCHIO, in Lucca; ARNO rises in the Apennines, in the province of Arezzo, flows westward, passing Florence and Pisa. Its principal affluents on the right are: the *Sieve* and *Ombrone*; on the left, the *Elsa* and *Era*. The Arno communicates with the Tiber by a canal, partly natural and partly artificial, the basis of which is the *Chiana*, which flows from the lake of Monte Pulciano, on the one side, to fall into the Arno, and from the lake of Chiusi, on the other, to fall into the *Paglia*, an affluent of the Tiber; but these two lakes are really only one with two names, in different parts. The OMBRONE flows through the provinces of Siena and Grossetto, in Tuscany, and falls into the sea in the middle of the Sienese Maremma. The Grand-duke has caused a canal to be dug to carry a part of its waters into the lake or lagune of Castiglione, for the purpose of filling it up with the mud and earth brought down by the river, and thereby removing one cause of malaria. The TEVERE (TIBER) rises near the eastern border of Tuscany, as far north as Florence, and near the source of the Arno, and flows south and south-west into the Tuscan sea below Rome. At Ponte Molle, near Rome, its stream is 600 feet wide, and it flows into the sea with a strong current. Near its mouth the Tiber divides into two branches, one of which enters the sea at Ostia, the other at Fiumicino; by the latter of which vessels now pass to and from Rome. Its principal affluent on the right is the *Chiana*, with its tributary the *Paglia*; on the left it receives the *Topio* or *Topino*, whose affluents are the *Chiasco* and the *Timia*; the *Nera*, with its affluents the *Corno* and *Velino*; the *Cremera*; and the *Teverone* (anc. *Anio*.) The *Marta*, the outlet of the Lake of Bolsena.

In the kingdom of Naples the principal rivers are,—the *Garigliano* and *Volturno*, which flow through the Terra de Lavora, and fall into the Gulf of Gaeta; the *Sete*, in the Principato Citra; the *Crate*, in Calabria Citra, and the *Bradano*, in the Basilicata, both of which fall into the Gulf of Taranto; the *Ofanto*, *Candelaro*, and *Fortore*, in Apulia; the *Pescara* and *Tronto*, in the Abruzzi.

On the Adriatic side of the Roman State are the *Amone*, *Marecchia*, *Metauro*, *Esino*, *Musone*, *Putenza*, and *Chienti*. To the north of the Po, in Venetian Lombardy, are, the ADIGE or ETSCH, which rises in the Tyrol, passes Trent, Verona, and Legnago, then divides into several branches, and falls into the Adriatic, near the mouth of the Po; its principal affluent is the *Eisach*, on the left. The *Adigetto*, one of its principal branches, passes Badia and Rovigo; another branch, the *Canal Bianco* or *Castagnaro*, passes Adria. The *Bacchiglione*, *Brenta*, *Sile*, *Piave*, *Livenza*, and *Tagliamento*, flow from the Alps, through the Venetian provinces, into the Adriatic Sea; the first passing Vicenza and Padua; the second, Bassano; the third, Treviso; the fourth, Belluno; the fifth, Sacile; and the last passing Tolmezzo, Spilimborgo, and Latisana. The *Isonzo* or *Lisonzo* rises in the kingdom of Illyria, passes Goricia and Gradisca, and falls into the Adriatic.

LAKES.—The principal lakes of Italy are situate at the base of the Alps, on the northern border of Lombardy; but there are also many smaller lakes and considerable lagoons in the interior and on the coasts of the Peninsula. The *Lake Maggiore* formed by the river Ticino and 28 smaller streams, is about 48 miles in length, and from 4½ to 7 in breadth; its surface is 640 feet (195 metres) above the level of the sea, and its greatest depth 2625 feet (800 metres.) In a bay, about the middle of its western side, are the celebrated *Borromean Islands*, which, about the middle of the sixteenth century, were converted from barren rocks into beautiful gardens, and decorated and embellished at an immense expense by the Count Borromeo. They have been an object of admiration to travellers ever since. The lake is surrounded by picturesque hills, covered with vineyards interspersed with villas, and here and there with cascades which fall down the sides of the mountains. The *Lake of Lugano* is situate to the eastward of Lake Maggiore, to which it sends its surplus waters by the river *Tresa*. It is fed by 43 brooks and rivulets, and is surrounded by rugged mountains, generally rising abruptly from the water's edge; but leaving in six places small cultivated valleys which recede from as many bays. The *Lake of Como* and *Lecco*, about 37 miles in length, and from one to four miles in breadth. About the middle it divides into two branches, one of which terminates at Como, the other at Lecco, from which towns the two portions take their names; it is traversed by the Adda (an affluent of the Po), which comes from the Valteline, and leaves the lake at Lecco. The surface of the lake is about 650 feet (198 metres) above the level of the sea, and its greatest depth is 1698 feet (588 metres); but in the northern part it is shallow, and the shores are infested with malaria. This lake is much exposed to sudden and severe storms, occasioned by gusts of wind from the neighbouring mountains; but it is highly celebrated for the picturesque beauty of its shores, and is plentifully stocked with fish. The *Lake of Iseo*, between Bergamo and Brescia, 20 miles in length, and from 4½ to 7 in breadth. Its surface is about 630 feet (192 metres) above the level of the sea, and its greatest depth 984 feet (300 metres.) The *Lake of Garda*, one of the most beautiful of all the lakes of Lombardy, is about 35 miles in length, varying in breadth from 4 to 14 miles. Its surface is 256 feet (78 metres) above the level of the sea, and its greatest depth 951 feet (290 metres.) Its principal feeder is the river Sarca, and its surplus waters form the Mincio, an affluent of the Po. *Orta*, to the south-west of Lake Maggiore, about nine miles in length, a romantic lake, surrounded by lofty mountains, wooded slopes, and shores enlivened with numerous villages. Besides these, there are the smaller Alpine lakes of *Varese*, *Monate*, *Gomabio*, to the east of Lake Maggiore; *Piano*, near the east end of the Lake of Lugano; *Lake Pusiano*, and *Lake Sala*, south-west of Lecco.

In Central Italy:—The *Lake of Perugia* (ancient *Thrasimenus*), 50 miles S.E. of Florence, is a beautiful sheet of water, about 30 miles in circumference, and, in some parts, about four miles across. It is surrounded by picturesque hills, abounds with excellent fish, and one of the rivulets which flows into it bears the name of *Sanguinetto* (bloody), so called from its having flowed with blood on occasion of the terrible victory gained by Hannibal over the Roman Consul Flaminius. The *Lake of Bolsena*, a circular basin in the Roman territory, about 50 miles N. of Rome, is 40 miles in circumference, and is surrounded by volcanic hills. The *Lake of Bracciano*, 20 miles N. of Rome, is also a circular basin, 28 miles in circumference, and more than 6 miles across. The *Lake of Albano*, 12 miles S.S.E. of Rome, an oval-shaped basin, is one of the most beautiful pieces of water in the world, and, in respect to scenery, beyond comparison the finest of those of purely volcanic origin in Italy. It is 2½ miles in length, 1½ in width, more than six miles in circuit, and 919 feet above the level of the sea.—(*Gell's Topography of Rome, &c. I.* 39.) It is situate in a deep hollow, formed by a volcanic ridge, 8 miles round. The water escapes through an emissary or Tunnel, more than a mile and a half in length, cut through the hill by the Romans, 359 years B. C., and still in perfect preservation. The *Lake of Nemi*, a small circular basin to the south of Albano, formerly embosomed in the *Nemus Dianæ*, from which it takes its modern name. "Nothing," says Sir William Gell, "can exceed the beauty of this *Speculum Dianæ*." Its surface is 1022 feet above the level of the sea. *Baccano*, another circular lake, in the bottom of an extinct crater, 20 miles N. of Rome, is now almost completely drained by deep cuts through the lip of the crater. *Lake Martignano (lacus Alsietinus)*, 16 miles from Rome, between Baccano and Bracciano, in a crater four miles in circumference, and 310 palms deep. Near it is the *Lake of Straccia Cappa* or *Cappi*, about 2½ miles in circuit, and 49 palms deep. About 13 miles east of Rome, on the road to Tivoli, are three lakes, from one of which, called *Solfatara*, or *Lake of Zolfo*, flows a strong sulphureous current, generally accompanied by a long line of vapour, in an arti-

ficial channel, nine feet wide, and four deep, into the Teverone. The water of these lakes adds continually to the rocks around them by petrifaction or incrustation; and the lake called *the Lake of Tartaro*, two miles nearer Rome, which was once deep, has now so nearly filled itself with its own deposits, that in June 1825 it was perfectly dry, a crust having been formed, which probably cut it off from the subterraneous reservoir below.—*(Gell*, I. 72-3.*)* The *Lake of Celano* (ancient *Fucinus*), in Abruzzo, 15 miles long, from four to six wide, and 100 square miles in superficial extent, is surrounded by hills through which there is no natural outlet for its waters. For the purpose of draining it, a tunnel, 3 miles long, leading to the Liris (Garigliano), was formed by the Roman Emperor Claudius; but, that having in the course of time been choked up, the lake increased so much as to cover more than 10,000 acres of the best land in the province; and the tunnel has accordingly been re-opened, and other hydraulic works constructed, so as to keep the lake at a certain low level. The *Lake Amsancto (Ansancto Nesanto)*, in Principato Ultra, a mile and a half from Rocca San Felice, at the mouth of a valley, and close under a steep shelving bank of decomposed limestone, is of a rhomboidal shape, measuring diagonally about thirty paces by twenty. The water continually bubbles up over a large portion of the surface, with a noise resembling that of distant thunder, though it does not rise higher than two feet. It is of a dark ash-colour, and is supplied by a constant and rapid stream which runs into it from under the barren rocky hill on the one side; a little above it are holes in the ground through which warm blasts of sulphurated hydrogen gas are continually issuing. On the opposite side of the lake is another but smaller pool, called the *Coccaio* or Caldron, on the surface of which are continually floating in rapid undulations thick masses of carbonic acid gas, which are visible at the distance of a hundred yards. The larger lake bears the name of *Mephite*, and is Virgil's *Vallis Amsancti*, through which he makes the Fury Alecto return to Hell, after having roused the Italians to war against Æneas. The *Pontine Marshes*, on the coast, midway between Rome and Naples, 24 miles long, and from 6 to 12 in breadth. Repeated efforts were made during many ages to drain these noxious swamps, a work which has been nearly accomplished by the exertions of Popes Pius VI. and VII.; and this tract of country, whose atmosphere was formerly fraught with disease and death, may now be passed by travellers with little danger, except in July, August, and the beginning of September. The ancient Appian way, and the modern road from Rome to Naples, pass through them. The marshes now form a luxuriant pasturage for cattle.

CLIMATE.—In a country which extends through ten degrees of latitude great varieties of climate must arise from position alone; but in addition to this, the climate of Italy is modified by the proximity of lofty mountains, and the influence of the sea. According to Saussure, Italy, in respect of climate, may be divided into four regions:—The first extends from latitude 46° 28′ to 43° 30′, comprising Lombardy and the northern portions of the Roman States. In this region the mercury of the thermometer sometimes falls 23° below the freezing point; the lagunes at the mouths of the rivers are sometimes frozen; and in January and February snow lies for ten or fourteen days. Delicate plants fail to grow except in sheltered places; but mulberry trees flourish, and rice is cultivated. Slight frosts occur during night in November, and sometimes so late as April; and even in summer, a benumbing cold is brought down from the Alps by the north wind. The second region extends from 43° 30′ to 41° 30′, including Tuscany, Lucca, the southern part of the Papal States, the Abruzzi, and the whole of the western coast to the south of the Appenines. Some part of the latter, indeed, extends northward beyond the 44°; but, being sheltered by the Appennines, it partakes of the more southerly climate. This region is the appropriate climate for the orange, the lemon, and the olive; but even here snow is occasionally seen on the ground. The summer heat at Florence and Rome often rises to 90° Fahrenheit, but in the former the winter is considerably prolonged by the vicinity of the mountains, which in that season, and indeed during the whole year, send down piercing cold winds. The third region extends from 41° 30′ to 39°, and comprises the greater part of continental Naples. Here snow is rarely seen, and never remains on the ground; the mercury seldom falls more than seven degrees below the freezing point, and all plants of the agrumenous tribe flourish in the open air. In the fourth region, which includes Calabria Ultra and Sicily, the mercury rarely falls below the freezing point, and snow and ice are unknown, except upon the tops of Etna and Sila. Tropical fruits come to perfection in the open air, the sugar-cane flourishes, cotton ripens, date trees are seen in the gardens, and the enclosures of the fields are formed by aloes. But this classification applies only, or principally, to the lowlands of Italy; for the increasing elevation of the sides of the mountains, the vicinity of the sea, and the volcanic nature of the soil, all exercise an influence which occasions many local variations of climate. The tops of the Alps are covered with perpetual snow. The northern Apennines are usually clothed with it from the middle of October to the beginning of April; and on the highest mountains of Abruzzo, the Majella, and the Velino, it remains from September till May. The northern part of Italy, indeed, including Tuscany and the Papal States, does not generally present that charming aspect which travellers from the north expect to find in the garden of Europe; it is only after passing Terracina and Manfredonia, on the east and west coasts, that they are introduced to the region, where the winter is scarcely colder than the English September; where vegetation continues without interruption, and the air is filled with aromatic odours. The mean temperature of Naples is, in winter 27° 14′ Fahrenheit, in summer 97° 35′. The climate of Italy is, however, not without great and serious inconveniences. From May to September a burning heat pre-

vails; the sun threatens to destroy vegetation; the land, unrefreshed by a drop of rain, assumes a russet hue; the cool breeze is scarcely perceptible, except upon the coasts, or is so vitiated as to bring with it from the shores of Africa only a thick damp vapour, which is in the highest degree oppressive. Under the noxious influence of the *Sirocco* (south-east wind), vegetation droops and withers, and the human frame is afflicted with langour and dejection. In addition to these external evils, volcanic heat glows perpetually under ground, and periodically sends forth noxious vapours, which are injurious to health, and sometimes threaten to depopulate extensive districts. To these evils may be added the annoyance produced by numerous swarms of insects, which fill the air, visit the houses, and are a constant source of vexation. The vast lagunes at the mouth of the Po, the Pontine marshes, and other similar swamps, generate miasmata, which shorten human life, and are reckoned among the causes that the proportion of deaths to the whole number of inhabitants is greater in Italy than in any other country of Europe.

So far then from possessing the finest climate in Europe, Italy may almost be said to possess the worst, or at least the most unhealthy. The clear blue sky gives only a deceitful beauty to the landscape; for there is hardly a spot in the country that is free from the approaches of the *malaria*, a mysterious scourge which, during a great part of the year, hangs over its finest plains, has converted large tracts of country once cultivated and populous, into deserts, and appears to be in some places continually extending its domain. But besides the *malaria*, the climate is in many parts subjected to excessive changes of temperature, from its relative situation to the Alps, the Apennines, and the deserts of Africa. In England atmospherical changes are very frequent, but they are limited in their range; while in Italy the reverse is the case; the changes are not very frequent, but their range is often most extensive; and the frequent, but slight vicissitudes of the English atmosphere are not to be compared to the alternating mountain blasts and siroccos of Italy. Indeed, the very circumstance which forms the charm, and the theme of praise, in the Italian climate, is that which renders it dangerous, because it is deceitful, namely, the long intervals of fine weather which occur between the violent changes.

The Italians boast much of the dryness of their climate. In some places, however, as at Pisa, as much rain falls as in Cornwall; at Rome, only about one-third less than at Penzance, the average quantity being 28 inches, and the number of rainy days about 117 in the year. At Naples and Leghorn the average is 35 inches; at Pisa, 45; at Genoa, 51; at Venice, 33; at Ferrara, 25; but at Altemura, in the kingdom of Naples, and at Teramo, only 19 or 20 inches.—(*Gell's Top. of Rome*, I. 252.) In general, however, rain falls less frequently than in England; but it makes up for this infrequency by falling in torrents, flooding the water courses, overflowing the plains, and saturating the ground with moisture. The powerful sun then bursts forth, and rapidly exhaling, not only the aqueous vapour from the soil, but also the miasmata generated by the decomposition of vegetable and animal substances, produces a state of the atmosphere which often proves fatal to the invalids who have visited the country in quest of health.

GEOLOGY. — Italy, traversed, with slight exceptions, throughout its whole length by the Apennines, is naturally divided into two nearly equal halves, which, however, are of essentially different formations. As far as is yet known, the Apennines, throughout the greater part of their mass, are a uniform limestone range of great thickness; though in their northern and western prolongation there are considerable variations of structure and formation. From the point where they are connected with the Alps, as far as Florence, the range consists of strata and beds of slate, limestone, and a magnesian rock. The summits which overlook Genoa and the Gulf of Spezzia are principally formed of the last named substance, which is the euphotide of geologists. The mountains from Florence to Abruzzo, and from Abruzzo to Calabria, consist of limestone, resembling that of Jura; in Calabria the central part of the chain is formed of granite, gneiss, mica slate, and other primary rocks, resting upon which, in the lower parts of the country, are deposits of tertiary rocks. But along the Mediterranean side of Italy, wherever the hilly plains expose the base of the mountains, more ancient rocks appear at the surface, uncovered by the limestone. On the opposite, or Adriatic side, however, where the limestone bed is of enormous thickness, these remains of older formations are entirely wanting. The country between the mountains and the sea, on both sides of the Apennines, is much broken, and is covered by extensive masses of sandstone and marl of very recent formation, containing remains of well preserved shells, which in many cases have scarcely lost their colour and animal matter, of large cetaceæ and other marine objects. These masses, which have been termed the *Sub-apennines*, commence, on the Mediterranean side, in the territory of Lucca, and, after some interruption in Naples, terminate near Reggio, in Calabria. The marine hills on the right bank of the Tiber, at Rome, and the sandstone and marl of the Vatican and Janiculus, entirely belong to this formation, which can be traced among the Apennines to the height of about 2000 feet. Wherever it exists, it covers the limestone and the older formations in an unconformable and overlaying position.

Along the south-western coast of Italy, where the limestone and newer formations are thinnest, a volcanic belt extends from the frontiers of Tuscany in an almost continuous line, parallel to the nearest range of mountains, into Campania, or the Terra de Lavoro, in the neighbourhood of Naples; but their vents, except those in Campania, were in a state of quiescence long before the appearance of man in the country. The environs of Rome lie between two of the most remarkable centres of these volcanic ridges: — On the north or north-west the trachytic Monte Cimini, between Viterbo and

Bolsena, and the extinguished craters of Viterbo, Bolsena, Bracciano, and La Tolfa; and to the south-east, the basaltic hills of Albano, Frascati, and Marino, and the ancient craters of Albano and Nemi. Accompanying this belt of volcanoes, is a bed of tufa regularly extended from the mountains of St. Fiora in Tuscany, through the Romagna into Campania, the vicinity of Vesuvius, and the Phlegrean fields, and even into Ischia, Procida, and Lipari; but in the neighbourhood of Rome, the tufa strata are intermixed with a limestone of modern formation, called travertino, of which the principal monuments of that city are built, and with formations of marl, clay, river sand, and other fresh-water deposits.

The only active volcano now in Italy is *Monte Vesuvio*, situate on the eastern shore of the Bay of Naples. It is composed of an older portion, named Monte Somma, evidently the remaining half of a very large crater, and of the modern conical summit rising within and overtopping it. The first recorded eruption of Vesuvio took place in the year 79 of the Christian era; since which time, its eruptions have been frequent, and often terribly destructive. To the westward of Naples is situate the volcanic region named the Phlegrean fields, where, in the year 1538, a hill, still called *Monte Nuovo*, 413 feet high, and 8000 in circumference, was thrown up in two days. The hill is composed of fragments of scoriform matter, or of a compact rock of an ash-grey colour, in some places resembling trachyte, and in others approaching to porphyry and calx, and on its summit is a crater of a quarter of a mile in circumference. Between Monte Nuovo and Puzzuoli, is an extinct volcano named the *Solfatara*, from which gaseous exhalations mixed with aqueous vapour are continually rising. The rock of the hill is trachyte, and a vast stream of lava extends from it to the sea, where it forms the promontory of Monte Olibano, overtopping the extensive formation which reaches from Puzzuoli to Cuma, and appearing to be continuous with the rock which is found in the vicinity of Naples, and which, long known by the name of Puzzuolana, is a formation of volcanic tufa. The lakes of Agnano and Avernus occupy the craters of extinct volcanoes. Monte Barbaro, also on the west side of Naples, has on its summit a crater of great antiquity, now covered with verdure The crater of Astroni, likewise, is of such perfect formation that it has been selected by the King of Naples as a preserve for wild animals destined for the chase. According to Brieslac, the number of craters in the vicinity of Naples is not less than twenty-seven. The *Grotto del Cane*, situate on the borders of the lake of Agnano, is perpetually giving out carbonic acid gas, mixed with aqueous vapour, which proves fatal to any animal plunged into it, an experiment often tried with dogs *(cane)*, whence the name.

The great plain of Lombardy, which occupies nearly the whole of the north of Italy, is formed of tertiary rocks, more or less covered with diluvium; while the lower ranges of the Alps, in the districts of Como, Bergamo, Brescia, Verona, &c., and the hills of Brianza, in the plain of Milan, are of secondary limestone, probably identical with that of the Appenines. To the south of Padua rises a tract of high ground, named the *Euganean hills*, which consist of a trachyte formation evidently of volcanic origin. The tertiary deposits of Lombardy contain remains of whales of extinct species, of elephants, rhinoceroes, hippopotami, &c.; and fossil remains of the same kind occur more abundantly in the overlying diluvium. Tertiary and diluvial deposits also extend from Ancona along the coasts of the Adriatic, with but little interruption, to the extremity of the Peninsula.

Soil and Vegetation.—The variety which we have exhibited in the composition of the solid masses, which are the foundation of the cultivable mould, must have an influence equally diversified upon the nature of the soil and the vegetation. The soil of the valley of the Po, which consists partly of loam and partly of sand, and has been formed by extensive alluvial washings and gradual deposition, shews, upon the whole, more uniform relations than that deposited in the valleys and at the foot of the Appennines. Among these hills the soil possesses various qualities, according to the species of the rocks from which it has been formed, and which it still covers, as well as according to the different ways in which its particles were deposited. In the bottom of the great valley the soil is for the most part rich and deep, but along the bases of both the Appenines and the Alps, are vast accumulations of beds of pebbles, thinly covered with mould, which cannot be cultivated with any profit. The greatest difference is found between the soil which belongs to the middle and principal limestone region of the Apennines, which is mostly of a clayey nature, and the fine, loose, and generally dark-brown coloured mould, which has proceeded from the decomposition of volcanic products, and is in general highly favourable to vegetation. But besides these differences of soil, the great extent of the country in latitude gives to northern Italy a vegetation almost entirely different from that of the south; and the elevation of the ground above the level of the sea, from the coast to the plains and the mountain ridges, occasions also a great variety of vegetable regions.

The vegetation of Northern Italy bears a striking resemblance to that of the warmer regions of southern Germany, Switzerland, and France. The chestnut tree is the ornament of the forest; the vine, with its tendrils, climbs the mulberry tree; wheat and maize, in some districts, and rice in others, are the principal grains. Cultivation, which is favoured by the loose soil of Lombardy, derives great advantage from the abundant supply of water poured down from the mountains. An extensive and skilful system of irrigation is constantly employed, not only in watering the meadows, but also in promoting the cultivation of rice, which is entirely dependent upon it; and, in order to preserve the necessary degree of moisture in the air, the fields are bordered by trees, whose stems support ivy and vines. The whole of this region consequently exhibits a monotonous character, which, however, is lessened on approaching the mountains; while the valleys which open out of the Alps exhibit the greatest and the most varied natural beauties. At the outlet of some of those valleys the streams become expanded into lakes, which indescribably increase the attractions of the scenery. Steep mountain walls reflect the rays of the sun; yet the temperature is

moderated by the cool breezes from the mountains. The vine overhangs the liquid mirror, and chestnut trees cast their shadows along the bottoms of the hills. The laurel indicates the neighbourhood of the evergreen vegetation which particularly characterizes the south of Europe; and single pines and cypresses announce the peculiar forms of the trees which first appear more generally in middle and southern Italy. Rocks tower in picturesque forms above the trees; torrents rush through the deep ravines; and in the back ground, through the foliage of the pine clad mountains, are seen the snowy summits of the Alps.

The Apennines, as far as they bound the valley of the Po, draw a marked line of distinction between the productions of Northern Italy and those of the south; and the difference of vegetation on the opposite acclivities of the chain is striking. That upon the north side agrees entirely with the vegetation of the southern base of the Alps; whereas on the south side of the mountains, which suddenly sinks towards the sea, the olive is extensively cultivated, and many other evergreen trees and shrubs appear. Proceeding southward into Middle and Lower Italy we find the trees and shrubs characteristic of those regions limited to the lower plains in the neighbourhood of the mountains, and extending from the sea to a height of 1200 feet. These plants include the evergreen oak, the pistacio tree, the strawberry tree, and the myrtle. The olive tree extends over the whole of this evergreen region, and the laurel and the orange-tree likewise flourish in it. In the greater part of Italy, however, the orange-tree is found only in detached districts, which are peculiarly favourable to its growth, and is not cultivated to any considerable extent. Even where the culture of the orange is an object of importance, as in Calabria, there are still no proper orange groves. Hence the cultivation of the orange-tree has much less influence than that of the olive on the general aspect of the Italian landscape, the leading peculiarity of which arises from separate lofty pines with their wide spreading tops being mixed with groups of cypresses, which present a singular contrast. In a still higher degree the landscape acquires a distinctive character from the date palm; a tree which is found only in isolated and sheltered spots, especially on the coast, and even there it occurs very sparingly, only a few individuals generally growing together. Rising above this evergreen region, the vegetation of the next zone more resembles that of the northern parts of Europe. The evergreen trees and shrubs disappear, and in their stead grow deciduous oaks and chestnut trees, which are found to the height of 3000 feet. Above them the beech becomes the prevailing tree, accompanied sometimes by various trees with pointed leaves, as pinus picea, p. sylvestris, taxus baccata. At a height between 5000 and 6000 feet, the beech and the pine are found occasionally intermixed with creeping shrubs and alpine plants, and generally reach as high as 7500 feet; and with them are associated vaccinium myrtillus, arbutus uva ursi, juniperus nana. Only a few mountain summits exceed the height of this zone; these are the pinnacles of the Abruzzi, Gran Sasso, Majella, and Velino. The vegetation of Middle and Lower Italy varies very much in regard to its richness and abundance. In many districts it is most luxuriant; especially where crystalline or volcanic rocks produce a favourable soil; or where, as in some bays, rocks afford shelter against hurtful winds; or where the supply of water maintains the requisite degree of humidity. Travellers are enraptured with the rich vegetation at the base of the marble mountains of Massa and Carrara, and on the declivities of the Appenines towards Lucca; with that on the volcanic hills of Frascati and Albano, on the rocky shores of Terracina, Molo di Gaeta, Sorrento, and Salerno; and with that at the waterfalls of Terni and Tivoli; but such luxuriance is not general. Over the far greater part of the calcareous Apennines only a stinted vegetation is found. Myrtles, which fix their roots in fissures, and other evergreen shrubs, do not form a foliage so thick as to conceal the rocks on which they grow, particularly on the offsets or spurs of the mountains; it is only in the interior recesses of the range that high and thick forests are occasionally found. When, notwithstanding this barrenness, the mountains appear picturesque to the eye, the beauty in general arises from their outline alone. The indentations and projections can be distinctly recognised from a great distance, and occasion that striking contrast of light and shade which produces the most agreeable impression. The extraordinary clearness of the atmosphere, which gives an indescribable charm to distant objects, the deep blue of the sky, the unusual forms of the vegetation, the enrapturing view of the sea, and the remarkable appearance of Vesuvio and its smoke, all taken together, fix the gaze of the observer. Hence districts often appear beautiful, which, when viewed in reference to the surrounding objects, are not truly so; and after reflecting upon the scenery with unprejudiced composure, and considering what really constitutes the beauty of a landscape, we deem them inferior to

many in our own country. But it is not only what is produced spontaneously that imparts specific character to a landscape; that is, in a great degree, modified by cultivation. In this respect also, there are the greatest differences between Middle and Southern Italy. The regularly planted olive tree, with its stem often crooked and hollow towards the root, and its small bluish-green leaves, can never impart much beauty to a country; but the vine must always be an ornament, where, as in Italy, propped up by elms and poplars, it has a much more luxuriant growth than in France and Germany. Sometimes, as in the fertile plains of Naples, it climbs with its tendrils around the well cultivated fields, and forms a sheltering roof for the wheat, maize, or pulse, which they bear.—*(Sketches of South European Nature — Italy. By Professor Hausman.—Edin. New Phil. Journal, XXVIII.* 326.)

ANIMALS. — There seem to be few, if any, wild animals peculiar to Italy; the native quadrupeds have never been particularly enumerated; the wolf is still found among the Apennines, and the wild boar in Calabria. There is a great variety of birds; and, among the insects, the tarantula and the silk-worm are equally celebrated. The domesticated animals are not very remarkable, the country being ill adapted for grazing. The common breed of oxen is one of the largest known; but there is another species, principally found in Tuscany, which is much smaller, and is esteemed for its fine form and pure white colour. Sheep are generally scarce, though in La Puglia there are large flocks. In Southern Italy the cheese, butter, and milk, are derived from goats, which are kept in flocks. The pigs are all of the long-legged, unimproved breed. At San Rossara, near Pisa, in Tuscany, there is a breed of the Arabian camel, which was introduced about two centuries ago, but has considerably degenerated, the soil and climate being ill adapted for it.

PEOPLE AND LANGUAGE.—The Italians are a mixture of races, composed of Greeks, Gauls, Germans, Goths, Arabians, and many others, who have migrated into the Peninsula at various times, and intermingled with the aboriginal population, whose language they have superseded. They have long been divided into numerous tribes and nations, with separate political and social interests, and speaking dialects so different, that the inhabitants of one province can scarcely, if at all, understand the language of another. From these dialects, however, has been framed a speech which by cultivation has attained a peculiar character, and has become a common bond of union. The language employed by the best writers, is nearly the same in every part of Italy; and all the educated classes can understand and relish the works of the great Italian classics, Dante, Petrarcha, Boccacio, Tasso, and Ariosto, which are written in the Tuscan dialect. The basis of the language is the Latin, but very much modified by the infusion of foreign elements, and by the inevitable changes of many centuries. As a nation, the Italians, excepting those of the lowest class, are a fine race of people. The men are well formed, rather slim than stout, but strong and agile, with a dark complexion, expressive countenances, dark sparkling eyes, and, generally, black hair. Their gait is grave, but not solemn, and their whole appearance is indicative of self-respect. The women have narrow foreheads, black or dark-brown hair, large, brilliant, and expressive eyes, a beautiful nose, which, with the forehead, forms the elegant Roman profile; a small mouth, with lips rather swelling; a clear white complexion, with slight red tinges appearing through it, and a delicate, but well formed figure. But the lower classes, in consequence of early marriages, of living wholly on vegetable food, and hard labour under a burning sun, rarely display any peculiar attractions. The lower class of the town population are in bad repute, as to both morals and instruction. They are represented as more acute than honest, and as restrained from violations of life and property only by the activity of a very vigilant police. In no country is to be found a greater number of beggars, or so numerous a body of people, as in all the cities of Italy, whose cares extend merely to the wants of the passing hour. The greater part, however, of the population in the country is devoted to agricultural pursuits. Very few of these are in circumstances of even moderate affluence; a few more may be represented as in a state of comparative ease, enjoying a bare competency; but the great mass of the people, to which all the other classes bear but a small proportion, are in the most wretched condition. They are the occupiers of small portions of land, sometimes not larger than an acre, and generally less than four acres, where, living in miserable hovels, which barely furnish them with shelter, they labour in their fields and support themselves and their families on half the produce of the land, the other half forming the proprietor's rent. Even with the utmost care, their supply of food sometimes fails, and they have then no other source than beggary or starvation. This is the condition of the great mass of the people of Northern and Middle Italy; while, in the South, the lazzaroni of

Naples are living proofs of the wretched condition of great numbers in that more fertile soil and more temperate climate. Some German travellers have even asserted that the majority of the tenants in Italy are in a worse condition than the serfs in those parts of Germany where the system of serfage continues in force. An excessive population, and a system of legislation favourable only to the rich, are the chief causes of these evils. Capital, courage, and opportunity are wanting to enable the peasantry to attain better circumstances elsewhere. But one of the greatest and most dangerous evils of Italy, at the present day, is the legalized mendicancy which everywhere prevails; a system the more dangerous, because the support of it is regarded as a proof of beneficence and genuine christianity. Large foundling hospitals exist in almost all the cities, in which thousands of deserted children are annually provided for; other institutions of various kinds are likewise numerous; and the result is the continual increase, rather than the prevention or alleviation, of beggary, misery, and crime.—*Raumer's Italy.*

RELIGION.—All the Italians may be said to profess the Roman Catholic religion, because only a small fraction of the population adhere to any other creed. This fraction is subdivided into: the *Vaudois*, or *Waldenses*, an ancient sect of Protestants, who occupy the valleys of Lucerne, Angrogno, and Saint Martin, in Piedmont; the *Calvinists* and *Lutherans*, established in the principal commercial towns, particularly at Venice, Naples, and Leghorn; the *Greeks*, who are found at Venice, Leghorn, and in different parts of Naples; and the *Jews*, who live in all the great towns and places of trade, but are most numerous at Rome, Leghorn, and Venice. The Roman Catholic clergy are very numerous, being said to amount to about 500,000, or to one in forty of the population. But the number of sees, which formerly exceeded that of all the bishopries in the rest of Christendom, has been much reduced, as well as the greater part of the monasteries which once abounded in the cities and towns. The churches, however, still possess great wealth, and are everywhere sumptuous in their decorations and ornaments, containing much of what is most magnificent in art, and most refined in taste and beauty. The exterior of the churches is, in general, very imposing, and the religious ceremonies are performed with the greatest degree of pomp and solemnity. The higher clergy possess great power, they all enjoy immunity for their persons and property, and are in most cases exempted from taxation. The secular priests are under the superintendence of the bishops, and the monasteries are governed by the chiefs of their several orders. The moral virtues, however, of the people, owe but little to the institutions of the church; for though religion is interwoven with the whole fabric of Italian life, and pervades intensely the entire frame of society, it exercises but little influence on the conduct and character of the mass of the population. Penances, confessions, and absolutions, are the almost universal substitutes for moral qualities; and little beyond these is inculcated in religious instruction.

EDUCATION.—In no part of Europe is the education of the lower classes so much neglected as in Italy; for, though some advances have been made in Lombardy and Tuscany, no improvement has yet been projected in the other States. The instruction of the poor is entirely in the hands of the clergy, and is so ill attended to that but few of the peasantry can read, while of the mechanics in the towns it is difficult to find one who can write his own name. The institutions for the education of the higher classes are also far behind those in other countries of Europe. Among these are the colleges and lyceums, where the instruction is partial, and little calculated either to improve the taste, or to foster freedom and expansion of thought. The studies of the youth are principally directed to logic and classics, to the exclusion of the sciences, the languages of other countries, their customs, institutions, and modes of thinking and reasoning. Mathematics are scarcely known, but casuistry is sedulously cultivated. The Ambrosian College and the Brera College at Milan, are exceptions to this description, but in everything, except classical literature, even they are far from being well conducted. Notwithstanding, however, the disadvantages under which they labour, many Italians may be said to be well educated, and to be qualified, upon some subjects, to rank with the most distinguished literary and scientific men in Europe. They acquire knowledge not by means of their institutions but in spite of them. A general desire for knowledge seems likewise to be pervading the country; and under its influence both literature and science will extend more rapidly by means of self-cultivation, than through the instrumentality of indifferent, or ignorant and hostile teachers. The universities are sufficiently numerous, and nearly all of ancient date: Bologna, founded in the year 1119; Naples, 1224; Padua, 1228; Rome, 1248; Perugia, 1307; Pisa, 1329; Siena, 1337; Pavia, 1361; Turin, 1412;

Parma, 1422; Florence, 1433; Catania, 1445; Cagliari, 1764; Genoa, renewed and extended in 1783; to which may be added that of Modena, which, after long neglect, has been lately re-established. In almost all the cities there are literary and scientific societies, which have been long in operation, and have cherished and encouraged learning among their members. These societies which were begun in the fifteenth century, and have multiplied and increased ever since, have contributed, since the revival of learning, to its preservation, at least, and have been, in a great degree, the means of bringing talents and industry into public notice. One of the earliest, as well as the most celebrated, is the Academia della Crusca at Florence, established for the purpose of improving the Italian language, by which it has acquired great renown; but the most flourishing of these institutions at present, are the Imperial Institute at Milan, and the Academy of Sciences at Turin. The institutions for the promotion of the fine arts are numerous, and are placed in connection with schools, in which painting, sculpture, and architecture are taught by competent masters. The most important of these are at Rome, Florence, and Bologna. Italy abounds with collections of books, and especially of manuscripts of great antiquity and of high value. The libraries, however, are generally very deficient in works of science and of modern literature. The most celebrated of the libraries are those of the Vatican at Rome, the Ambrosian at Milan, that of St. Mark at Venice, and of the Magliabechi and Medici at Florence. There are also in every part of Italy museums of great value, which are generally arranged in the most perfect manner. The most distinguished of them are those of Florence and Naples: all of them are open to the public, and thereby made the common property of all nations. Each palace of the nobility, and every public building is a cabinet of art; and every city boasts of its antiques or collections of modern works. Picture galleries are to be found everywhere; the churches too are adorned by exquisite pieces of painting and sculpture, as well as by their architecture. There are also botanic gardens attached to most of the universities, and several in the vicinity of the larger cities; and there are astronomical observatories at Bologna, Padua, Milan, Florence, and Palermo.

GOVERNMENT. — Italy is divided into nine sovereign States, in all of which, with the exception of the petty republic of San Marino, the government is vested in an absolute monarch, and is everywhere exercised with the most rigorous despotism. But even in this respect there are varieties; for, while some of the governments are so despotic as to be positively oppressive, others are exercised with a degree of liberality and attentive consideration of the welfare of the people that would almost entitle them to be called paternal. The governments of Rome and Naples, though equally despotic with the others, have long been singularly inefficient, powerless for good, and exercising but little restraint upon the corruptions of a disorganized society. Upon the affections of their people, whom they have never benefitted, the sovereigns have no hold, and it is only by the support of Austria that they are enabled to keep possession of their thrones and dominions. But, while it affords this protection to the governments, the power of Austria effectually checks the energies of the people, who, participating in the spirit of liberty which at present pervades all Europe, are eager to throw off the yoke of their worthless oppressors. Of these nine States, three are kingdoms; one, a grand-duchy; three, duchies; one, an elective ecclesiastical monarchy; and one a republic. Their names, areas, population, revenues, and military forces, are stated in the following table: —

Names of States.	*Area in Sq. Miles.*	*Population.*	*Revenue.*	*Army.*
Kingdom of Lombardy,	8,460	2,474,000	—	31,400
and Venice,	9,472	2,094,000	—	
Kingdom of Sardinia,	29,050	4,470,000	—	35,200
Kingdom of Naples,	44,510	7,752,000	4,500,000	37,725
Grand-duchy of Tuscany,	8,700	1,350,000	—	4,500
Duchy of Parma,	2,300	440,000	—	1,400
——— Modena,	2,068	390,000	274,000	1,759
——— Lucca,	420	145,000	—	680
States of the Church,	17,860	2,471,000	—	17,707
Republic of San Marino,	27	8,000	—	40
TOTALS,	122,867	21,483,000		140,390

Of the kingdoms and duchies the sovereigns are hereditary monarchs; the sovereignty of the States of the Church is vested in the Pope, the primate or head of the Roman Catholic Church, and who is elected for life, out of their own body, by

the college of cardinal bishops, priests, and deacons. The Popes being generally old men before their election, their succession has been more frequent than that of any other series of sovereign princes, hereditary or elective. The Pope unites in his person three different offices: — 1. Supreme pontiff and head of the Roman Church and hierarchy; 2. Bishop of Rome; 3. Temporal sovereign of the Roman State. His ministers in his spiritual capacity are: — 1. The *cardinal-grand-penitentiary*, who decides on cases of conscience, with the assistance of several prelates; 2. The *cardinal-sommista*, who presides at the tribunal of the Apostolic Chancery, and whose duty it is to give his opinion on matters of doctrine or discipline, to affix the seals to, and expedite the Pope's bulls (*i. e.* charters, letters, rescripts); 3. The *cardinal-prodatario*, who, with a numerous body of sub-officers, decides all affairs concerning livings and other temporalities of the clergy, dispensations, licences for marriages between relations, &c.; 4. The *cardinal-segretario di brevi*, who has the charge of the Pope's correspondence concerning ecclesiastical matters, expedites the briefs to foreign potentates, &c.; 5. The *uditor santissimo*, a prelate who examines, revises, and reports upon all matters of importance laid before him, examines the claims of the candidates for bishoprics, and is generally the intimate adviser of the Pope, whose full confidence he is supposed to enjoy; 6. The *cardinal-vicar*, who exercises the authority and performs the duties of the Pope as bishop of Rome, As temporal sovereign, his two principal ministers are the cardinal secretary of state, and the cardinal-camerlingo; the former of whom unites in his person the departments of both the home and the foreign affairs, is the prime minister and representative of the sovereign both with foreign courts and with his own subjects. He is appointed by the reigning Pope, and leaves office on the death of his superior. The camerlingo, chamberlain, or master of the household, is appointed for life. The republic of San Marino is situate within the papal territory, and is under the Pope's protection. It consists of only the town of San Marino and four neighbouring villages, but is one of the oldest States in Europe. The Lombardo-Venetian kingdom, or States of Lombardy and Venice, form part of the empire of Austria, and are directly ruled by a viceroy under the controul and direction of the imperial ministry of Vienna. Besides the nine States above mentioned, there is also the small *principality of Monaco;* but the prince resides in Paris, allowing his territories to be garrisoned by Sardinian troops, and is in fact merely a mediatized prince, subject to the King of Sardinia.

PRODUCTIVE INDUSTRY.—*Agriculture.*—With respect to its agriculture, Italy may be divided into three regions; the first consisting of the great plain of Lombardy and Piedmont, bounded by the Alps on the west and north, the Apennines on the south, and the Adriatic Sea on the east; the second is that which extends from the western Apennines, and the frontiers of France and Lombardy, to the borders of Calabria; and the third comprehends those districts where animals and vegetables thrive, but from which man is almost wholly excluded by the malaria, and which, extending along the sea coast from near Pisa to Terracina, is called the *Maremma (Ora maritima.)* Lombardy is without doubt one of the richest countries in the world; the soil of the plain, or central part, is entirely alluvial, composed of materials which have been deposited by water to an unknown depth. In the tracts nearest to the mountains, much gravel, and that of considerable size, is mixed with the earth; but it becomes smaller in size, and less in quantity towards the centre and eastern borders, so that almost the whole may be said to be composed of a black and very fertile mould. The neighbouring mountains afford an immense supply of water; and to this, not less than to the natural richness of the soil, is Lombardy indebted for its great fertility. To distribute the water, a very regular system is pursued, which it has required considerable skill and capital to carry into effect. From the irrigation thus practised arises an inconceivable fertility which supports a crowded population. Lombardy abounds in villages and large towns, and possesses all the beauty which richness and cultivation can give to a level country containing nothing which is naturally picturesque. The fields into which it is divided are small, and separated by rows of poplars, which give it the appearance of a wooded country. The country between Lodi and Cremona is the richest part of the Milanese territory. The soil is extremely fertile, and the system of irrigation the most perfect that can be conceived; but the culture of corn gives place, in a great degree, to that of pasture, which serves as food for the cows that produce the cheese so well known over Europe as the Parmesan. The district in which it is produced extends from Pavia to Milan and Lodi, about twenty miles, and in length about forty miles, from Abbiate-grasso, on the Ticino, to Codogno, near the confluence of the Adda and the Po. About 80,000 cows are kept for the purpose, whose annual produce is about 200 lbs. (155 kilogrammes) each. The value of the cheese and butter exported and consumed is about one million sterling (23,360,000 francs.) The other principal articles reared are, wheat, maize, oats, rye, hemp, flax, and legumes; and, in the flat grounds of the lower districts, rice, of which the quantity raised is now very considerable. A crop of rice is reckoned at three times the value of a crop of corn; but the stagnation of a large body of water in a hot climate, covering an extensive surface, which is necessary for the growth of rice, is highly injurious to health; the rice country is in consequence thinly peopled, and the few inhabitants are in a very sickly and diseased condition. In no other part of Italy is the cultivation of silk so large, so valuable, and so well understood as in the north. From the Var to the Isonzo, are extensive plantations of the white mulberry, in some places trained as tall and stately trees, in others pruned down almost to square bushes, but everywhere giving a peculiar, and attractive character to the agricultural scenery. With the progressive increase of the culture of silk, the value of land and the prosperity of the people have undergone a corresponding improvement; and it may be added, that the quality of the silk has greatly improved under the encouragement of a perpetually extending demand. The estimated produce of raw silk in Italy is believed to be now not much less than twelve millions of pounds annually, of which Lombardy, Venice, Tyrol, and Tessin produce 7,000,000; Piedmont and Genoa, 2,000,000; Naples and Sicily, 1,200,000; Papal States, 800,000; Parma, Modena, and Lucca, 550,000; Tuscany, 300,000: worth about £12,000,000 sterling. The cultivation of the land in Lom-

bardy, and indeed throughout all Italy, is performed solely by means of oxen. The plough is drawn by two oxen without a driver; the waggons also, or carts, are drawn by oxen, the horse being scarcely ever employed for any purpose of husbandry. The implements used are also everywhere of a very rude and unimproved construction. About four-fifths of the population of Lombardy are connected, directly or indirectly, with agriculture, and about eight-ninths of the whole surface of the country are under cultivation.

The Genoese territory rises everywhere from the seaside into hills and mountains, and is less adapted for agriculture, than for gardens and orchards. The olive is the prevalent object of cultivation, southern fruits are raised in the most favourable places, the chestnut on the higher grounds, while pasturage and herds are the objects of attention among the maritime Alps. Everywhere there is great industry, but nowhere much opulence, the proverb holding good; "He who possesses only olive trees will always remain poor." Even a trifling frost injures this delicate plant, and still greater destruction is occasioned by certain insects. Seedlings bear no regular crop of fruit till they are fifty years old; but, if propagated by cuttings, the trees bear in twenty-five years. In good years 150 or 200 olive trees, on a surface of two acres, will produce from 500 to 800 gallons of oil. The trees blossom in May, and the harvest begins in December. Orange and lemon trees yield a full harvest only after twenty years; they grow best on a light soil, which is well watered, and well manured. A hundred trees will produce 30,000 fruit. The pastoral part of the population are more opulent than the olive growers; though the pasturage and cattle are both inferior to those of Switzerland.—*(Raumer's It aly, I. 275, &c.)*

The agriculture of Tuscany belongs partly to a system of irrigation similar to that of Lombardy, and is partly adapted to the cultivation of the steep sides of the hills. Property is extremely subdivided, and the farms are in general cultivated by farmers who divide the produce with the landlord. The principal articles of cultivation are wheat, maize, clover, beans, peas, and other pulse; and, above all, the vine and the olive. Such is the richness of the alluvial soil in the valleys, that although manure is applied to it only once in five years, yet the crops are very abundant. The culture also which is very fine and careful, and the judicious succession of crops, have their share in producing this effect. An immense population lives on the produce of these farms; but there is observed among them a complete absence of all the conveniencies of life, and an appearance of the greatest penury in the midst of a country producing everything which the wants of the most luxurious can require. Either the population is too great; or their system of rural economy must be radically bad. The evil, indeed, seems to arise from the universal prevalence of the *mezzeria*, or half and half system, by which all the farms are held, and which seems expressly calculated to depress the farmer, and keep him in a state of hopeless poverty. The finest part of Tuscany is the valley of the Arno, which is everywhere most carefully cultivated; but with all the advantages of a rich soil, and temperate climate, adapted to the vine and the olive, the land does not yield more food for the support of man than in countries twelve or fourteen degrees farther north, countries which labour under all the disadvantages of a long and severe winter, of a spring which hardly deserves the name, and of a summer and autumn during which the inconstancy of the climate is severely felt. Tuscany was formerly celebrated for its high state of cultivation, and is still highly cultivated; but the quantity of labour expended is quite disproportioned to the result; the greater part of the produce is consumed by the labourer; the methods pursued are eminently unscientific; the capital swallowed up by the land is enormous; and every species of cultivation which does not contribute to supply the direct home consumption of the country is neglected. The forests have been destroyed or badly managed; mulberry-trees, which the country would produce in abundance, are not in favour with the cultivators, because they spoil the fields and contribute nothing to the use of the table. The rearing of silk-worms is not attended to; the production of silk is much less considerable than it might be; and the same may be said of every other article which is available only for exportation. In former times many of the Tuscan wines were celebrated for their excellence; but at present, though a vast quantity of wine is made, and is generally of good quality, the sole purpose of the cultivator is to render it suitable for home consumption. The culture of the vine is accordingly subordinate to that of the olive, the mulberry-tree, and grain, or is considered at best as only of equal importance; the vine being produced on the same lands, and subjected to a treatment quite unsuited to its perfect developement. Little pains are taken at the vintage, and the process of wine-making is still the same which has existed for generations. Of late, however, there seems a disposition to take measures for the better cultivation of the grape, and the more careful preparation of the wine; and, if successful, it may yet become an object of no small commercial importance.

The mezzeria system has existed from time immemorial, and is the only one understood in Tuscany; but it is costly in the extreme. Agriculture gives no fair return for capital; for, after deducting all expenses the proprietor does not receive more than a third of the produce, while the outlay for his half generally amounts to two-fifths or even three tifths of the total expense. Landed proprietors were formerly the wealthiest class of society, but relatively to other capitalists, they are now impoverished, and cannot compete with people whose fortunes are not vested in hereditary estates. One of the causes of the poverty of the Tuscan proprietors is the great number and expense of buildings required on their farms, where the houses of the peasants are of a very superior description, and have been mostly rebuilt within the last sixty years. The number of buildings too required for their villas, and the expense of maintaining them are ruinous to the owners, more especially now when comfort is as much an object of attention as grandeur was formerly.

Besides the Val d'Arno, and the hills, to which cultivation has been hitherto chiefly confined, there are in Tuscany two extensive fertile plains, the Val di Chiana, and the Maremme, which till lately were quite neglected. In the Val di Chiana, however, through the success of hydraulic operations, large tracts of country have lost their pestilent al character, and lands formerly useless have been turned into profitable estates. The Maremme, too, which had been uninhabitable for centuries, during many months of the year, through the effects of malaria, have been for several years the object of special attention on the part of the Grand-duke. A large expenditure has been devoted to their improvement; satisfactory results have been obtained in many districts, and are anticipated in all. Abandoned by man, the destructive energies of nature had for ages been contributing to make the Maremme what Dante has called them, a fit image of hell, the abode of desolation, disease, and death; but their present state is an interesting example of the power of art to arrest the devastations of nature, and to bring the very elements of ruin to contribute to healthful and profitable results. The contrast between their late and their former state is almost without example. They were the richest, and perhaps the most densely peopled part of ancient Italy. The most renowned cities of Etruria occupied districts, which for centuries have been encroached upon by pestiferous lakes and marshes, and covered with weeds, canes, and reeds. The climate, renowned in former times for its beauty and salubrity, had become pestilential; but cultivation is again gradually extending; capital is being invested; a laborious population is constantly narrowing the circle of the former seats of desolation; and the cares of Government aiding the progress of improvement by a liberal expenditure, promise ultimately to restore to profitable use large tracts which had been neglected as valueless, or abandoned as uninhabitable. Wheat is abundantly grown on spots, which only a few years ago afforded a scanty subsistence to a few wandering fishermen; and it is not unworthy of remark that while miles of fertile ground have been won from waste and pestilence by the deepening of rivers.

and the draining of marshes, the confining of the streams and lakes to narrow and defined limits has enabled the fishermen to obtain greater supplies of fish, with diminished toil and danger; so that the rent now paid to the Government by those who farm the fisheries, is greater than at any former period. The Maremme offer many attractions to cultivation and to capital. They possess the greatest variety of temperature and soil; the hills which skirt the level lands are rich in mineral productions; and, when the cross roads shall have facilitated intercourse with the main branches of communication, and the clearing of the brushwood, the forests, and the marshes shall have made the country inhabitable throughout the year, abundant employment will be found for capital and labour in new and lucrative enterprize. But vast estates throughout the Maremme, are still in the hands of a poor nobility, whose principal rental is derived from wood-cutting, and from the pasturage of flocks of sheep and goats which descend from the mountains in winter, and feed in the plains. Of sheep alone the annual migration is said to be from 60,000 to 80,000. Herds of buffaloes and other horned cattle are also frequently met with, and form another source of revenue; but the want of capital is everywhere visible, and the decay of the ancient aristocracy may be traced in the neglect or the gradual transfer of their large possessions. The great works for clearing and draining the Maremme were commenced in January 1829, and by July 1832, nearly £200,000 sterling had been expended in clearing and giving new directions to river courses, filling up the beds of lakes and marshes with the deposits of the rivers, in making roads and bridges, and the necessary buildings. One of the most remarkable improvements is the making of an excellent road along the west coast, where formerly not a dwelling was to be found through extensive tracts; but inns and other houses are now building, and the Government has frequently, as an encouragement to settlers, granted small pieces of land to those who have built houses. A universal opinion prevails that the pestiferous character of the marshes has been already much modified; great part of the marshy lands have been brought in and prepared for cultivation, and population is gradually spreading over a country formerly abandoned.

Most of the lands in the *Agro Romano*, or territory of the Roman State, as generally in the Maremme, are divided into large properties, though the extent varies much, generally from 1200 to 2400 acres. All the country from the Apennines to the Mediterranean is divided into possessions of considerable size, except in the suburban districts, and in the neighbourhood of the towns and villages, where there are small estates belonging to petty proprietors who often cultivate them with their own hands. But the number of wealthy proprietors is small; perhaps there are not twenty landlords of ample fortune. The large estates are for the most part held in mortmain. In the Adriatic marshes, and in the districts of Ferrara and Ravenna, the land is divided into large properties; elsewhere there is a greater subdivision. Agriculture is in apparent prosperity; but the majority of the landowners are poor; a few only are in easy circumstances; and the opulent are rare indeed. The value of land is infinitely various; but speaking generally, the most profitable agricultural pursuit, especially in the Maremme, is the grazing of cattle; and in the neighbourhood of Rome, hay is found to be the crop which produces the best return. In the Maremme the land is often left to repose for from three to seven years, during which time it is clothed with verdure. Agriculture is in a very backward state, owing to the want of instruction where the people are numerous, and, in the marshes, to the want of labourers. The agricultural labourers have no education whatever, and no means of acquiring it, though their natural aptitude is excellent. In the Maremme they live poorly; but in other parts of the country somewhat better. They seldom eat animal food; but use, for the most part, maize bread and polenta. Beans and pulse, as well as other vegetables, form ordinary articles of food. Their beverage is pischetta, a mixture of wine and water, in winter, and wine in summer. The coloni (farmers) are generally in debt to their landlords, whose portion of the charges of cultivation is more than they can bear, and they are often insolvent; so that the nominal returns for property held on mezzeria is seldom borne out by the results, and the consequence is a reduction of all the portion with which the farmer is overcharged. There are indeed many cases in which the amount received by the landlord is not one-sixth, instead of one-half, of the produce. The cattle of the Roman states are nearly sufficient for the ordinary consumption. Horses are exported; and there is a small importation of oxen and swine. The breed of sheep is increasing, and the supply of wool for foreign markets is greatly augmenting. Nothing can be more rude than the agricultural implements; heavy custom-duties prevent the introduction of those of foreign manufacture, and the useful arts are too little advanced to allow production of them at home. The impediments to agricultural improvement are numerous; the political situation of the country and its sad misgovernment; the protective system, which retards advancement; the want of capital; the scanty population of the Maremme, and the mezzeria system elsewhere; the want of knowledge, and more especially of agricultural knowledge among the cultivators; mortmain; the oppressive taxation, which falls particularly upon agricultural produce, and the difficulty of sales from the many restrictions. Indeed, says Sir William Gell, "at Rome, the expenses of cultivation, and the pressure of taxes are scarcely met by the sale of the produce of the soil; and grain from the Black Sea is often cheaper than that produced at home, in most of the commercial cities of Italy."—*(Top. of Rome, I.* 253) The people, however, are neither indolent nor unwilling to improve their condition; much activity and perseverance have been exercised; a general desire for improvement has been shown; a general conviction that great changes are necessary has been manifested; but the requisite intelligence is wanting. The smaller lakes in the Maremme have been drained, little has yet been done for the larger; there is still a vast field for useful and profitable exertion; but numerous impediments have hitherto checked it. The principal productions of the territory are corn, wheat and maize, rice, hemp, wine, vinegar, brandy, oil, timber, charcoal, and tobacco, and culinary vegetables, apples, cucumbers, melons, garlic, onions, potatoes, flax, seeds, and oleaginous vegetables, dyewoods, bark, potash, hay, soda, mulberry-trees, anniseed, &c., cattle and sheep, wool, cheese, hides, bacon, hams, lard, butter, silk, wax, honey, tallow, horns, bones Buffaloes, goats, mules, and other animals for carriage are to be found, but not in large numbers. Domestic poultry and game are produced in abundance.

In the kingdom of Naples there are three distinct systems of agriculture pursued, according to the nature of the climate and the soil of the mountains and the plains. The greater part of the surface of the kingdom is limestone, chiefly of a bluish colour and easily decomposed, which affords a soil favourable to the labours of the farmer. By far the greater part is mountainous, being covered by the Apennines and their branches; but there are two extensive tracts of level country, the one upon the Adriatic, and the other upon the Mediterranean, forming the plains of Apulia and Campania. There is a great want of rivers to supply to any extent the means of irrigation; but the fall of rain, which is very considerable, and which is heavier upon the western than upon the eastern slope of the Apennines, supplies their place. Nearly every species of plant peculiar to the torrid or the temperate zone is found in suitable sites; the palm-tree and the cactus flourish almost by the side of the oak and the fir; the cotton plant divides the field with hemp and flax. On the less elevated spots all the varieties of the orange and the lemon attain perfection; the olive "swells with floods of oil;" and the vine, allowed to extend its graceful tendrils from tree to tree, affords equal delight to the eye and to the palate. A peculiarity of Neapolitan agriculture is, that the soil produces a greater crop of cereal and grass when protected by trees from the burning rays of the summer sun, than when left open and unprotected. Hence, the cultivation of the vine, the olive, and the mulberry is most advan-

tageously combined with arable husbandry. In the best cultivated provinces the fields are covered with elms or poplars, on which the vines are trained, or with olive-trees planted in rows. The mulberry-tree is only planted extensively in Calabria; but, as it affords a most profitable crop with a small amount of labour, it is gradually spreading in the other provinces with the increase of the population. The farms in the elevated districts are small, varying in extent from one and a half to seven acres, and are almost all cultivated by manual labour. The principal articles raised are wheat, barley, potatoes, beans, rye, maize, and culinary vegetables; rye and barley only succeed in elevated spots, and spelt is sometimes, but much more sparingly cultivated. The system of agriculture practised in Campania is peculiar, and is considerably different from that of the hills. This district includes the seacoast of the Bays of Gaeta and Naples, between the Garigliano and Sorrento, with Ischia, Procida, and the smaller neighbouring islands, and stretches eastward to the main chain of the Apennines near Cava, Nola, and Avellino, including Benevento, and is distinguished as the region of active and extinct volcanoes. Its greatest length is about 69 miles, and its greatest breadth, from Benevento to the extremity of Ischia, about 50. Thus the whole of the province of Naples, and great part of the Terra di Lavora are included in the district. The soil of the extensive plain of Capua is composed of what has been called secondary tufa, to distinguish it from the more ancient or primitive tufa of Ischia, Procida, and the Vomero near Naples. Both kinds of tufa yield a most productive soil, easily decomposed, and of considerable depth in the plains. As the high road from Rome to Naples lies through the plain of Capua, the luxuriant vegetation of this part of Italy strikes involuntarily the most superficial traveller, who there sees flourishing crops of grain waving under the shade of myriads of olive-trees, and vine-clad elms or poplars. On the heights near Naples, cultivation is so admirably managed, that in some of the villas at Capo di Monte, three crops are actually produced at once, by the addition of the lofty pine, whose roof-like foliage towers so far above the vines, that it deprives them of but a small portion of the sunshine, while the delicate fruit which the former yields, is a most welcome addition to the juice of the latter in the dessert of the connoisseur. The valley of the Sebeto, between Capo di Monte and Vesuvius, is one continued garden, from which the markets of the capital are supplied; the sides of the volcano are covered with the vineyards, which yield delicious lacryma christi, a species of wine, which, like that of Pozzuoli, near the Solfatara, is said to owe its superior flavour, in a great measure, to the influence of the subterraneous heat. The population in this volcanic region is very dense; land is divided into farms of a middling size, and the abundance of manure causes the ground to be kept in an almost unremitting state of productiveness. The third system of agriculture is that pursued in Apulia, or the plains which extend from the foot of the Apennines to the Adriatic. From time immemorial this district seems to have been resorted to by the shepherds of the adjacent mountains; and now by a system of laws and regulations called the *tavogliere*, of the same nature with those of the Spanish mesta, and equally mischievous, the owners of the flocks and herds of the mountains have the established right of transporting them to the plains for winter pasturage; and to this singular institution the kingdom is indebted for a peculiar system of agriculture which prevails in the three provinces of Capitanata, Terra di Bari, and Terra di Otranto, where the farms are usually divided into three equal portions, one of which is under seed, the second fallow, and the third in repose, or waste. On the two latter the right of pasture is exercised by the tavogliere; and thus a tract of country containing two millions of acres is not only doomed to partial sterility, but is the cause of unproductiveness in all the adjoining provinces, from which it attracts the cattle, and in which it consequently prevents the accumulation of the means of giving fertility to the exhausted soil. Under the French domination the system of the Tavogliere di Puglia was abolished; but after the restoration of 1815, it was restored with its ancient local privileges, roads, resting-places, and the whole apparatus of administration. The total area of the kingdom of Naples is reckoned to contain about twenty millions of acres, of which one-fifth is occupied by towns, villages, roads, water, and places incapable of cultivation, and nearly one-eighth by forests, leaving 13,635,000 acres of cultivable soil, of which nearly twelve millions are found by the returns of the land-tax to be actually cultivated, or at least occupied; and as the population in 1836 was 5,781,036, this extent of land ought, with proper management, not only to suffice for their support, but also to yield a considerable surplus. But in the present state of matters, the periodical wanderings of the cattle not only deprive the farmer of manure, but dispose him to adapt his stock to the prevalent system, by preferring sheep, which are most easily managed at a distance, and which require no dairy establishment; and the consequence is, that the crops of corn, so far from sufficing for the support of the population, are actually deficient. In 1835, the number of live stock in the continental part of the kingdom of the two Sicilies was thus estimated approximatively. Beeves, 300,000; buffaloes, 40,000; horses, 60,000; mules and asses, 600,000; goats, 600,000; sheep, 4,000,000.*

Mines and Minerals.—The minerals of Italy are of small amount; and, though mines of gold, silver, and copper, were once wrought, they are now almost all extinct. It yields at present some alum in the States of the Church and Naples, some vitriol and antimony in Parma, and sulphur in the kingdom of Naples. In Lombardy, mining operations are confined to the procuring of iron in the Alpine valleys of Bergamo and Brescia, and of copper in Belluno. In Tuscany there are a great variety of minerals, which were once extensively wrought; but a large proportion of the mines have been abandoned. The most important are the iron mines of Elba, which are deemed inexhaustible. For a period of ten years, from 1825 to 1834, the quantity of ore produced annually was 1600 centi (each 25,000 lbs.), of which 700 centi were consumed in Tuscany, and the rest exported, chiefly to Rome, Genoa, Naples, and Corsica. At Perita, in the province of Grosseto, is a sulphur mine, which, for ten years, gave an annual produce of 413,000 lbs., but is capable of being greatly increased by a growing demand. At Monte Catini, in the valley of the Cecina, is a copper mine, producing 100,000 lbs. per annum, and there are other copper mines at Montieri, the produce of which is not known. The territory of Pietra Santa contains mines of iron and silver, and is rich in marbles, of which there are twelve quarries in operation, one of them yielding statuary marble equal to that of Carrara. In the Volterra district, near Pomerance, the lagoons of Monte Cerboli furnish boracic acid, which is ingeniously and economically obtained by impregnating the water with the gas which issues copiously from the ground. The produce is, in ordinary years, about 600,000 lbs., of which 100,000 lbs. are manufactured into borax, and the remainder exported to foreign countries. In the Volterra districts are numerous quarries of alabaster in full activity; stone for building, paving, and other ordinary purposes of life, is abundant; and also gravel, the employment of which is one main cause of the excellence of the Tuscan roads. The granite quarries of Elba and Giglio, which furnished the columns

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* *Lettres ecrites d' Italie, en* 1812 *et* 1813, par F. S. de Chateauvieux. Paris, 1816.— *Tableau de l' Agriculture Toscane*, by J. C. L. Sismondi. Geneva, 1801.— *Economia Rustica per lo regno di Napoli, &c.* Di Luigi Granata. Naples, 1835.— *Saggio Politico su la populazione e le pubbliche contribuzione de Regno delle due Sicilie al di qua del Faro*, Di M. Le Rotondi. Naples, 1834.— *Report on the Statistics of Tuscany, Lucca, the Pontifical, and the Lombardo-Venetian States, &c.* by John Bowring. London, 1837.— *Edinburgh Review*, "Agriculture and Statistics of Italy." Vol. XXVIII. 31.— *British and Foreign Review*, "Neapolitan Systems of Farming." IX. 507.— *Encyclopædia Britannica*, article "Lombardy."

so often found in the ancient buildings of Tuscany, are still capable of yielding similar materials. Travertine abounds in many parts of Tuscany; near Pisa, and in various parts of the Maremme, and in the territory of Siena, are marble quarries, wrought according to circumstances. At Monteoni is an alum mine; and in the Maremme are lead mines which are unwrought. In Lucca and the States of the Church are some mines, and numerous indications of metals and minerals, but they are little wrought, and in the latter State no accurate estimate exists of the quantity of minerals produced or worked; pozzalana, however, is both used at home and exported to some extent for subaquatic works; the Viterbo vitriol mines give more than 40,000 lbs. annually, one-half of which is exported; there are many mines of fossil coal, some of which have been wrought, but they are now utterly neglected. About 4,000,000 lbs. of sulphur is dug in Romagna, Pesaro, and Tormignano; but the government works only the alum mines, which are found at Tolfa; all others are private undertakings. There are many salt springs in Romagna and the Marche (frontiers), and a quantity of salubrious mineral waters, both hot and cold. Those of Porretta, near Bologna, are particularly esteemed; and those of Aqua Santa, in Rome, and in the neighbourhood of Ascoli, of Civita Vecchia, Riolo, Nocera, and Stigliano. Of Naples, the mineral productions are unimportant; and consist chiefly of some iron, extracted from mines in the vicinity of Stilo; with mines of rock salt, which are little worked. The province of Massa, in the Duchy of Modena, produces the excellent statuary marble found in the quarries of Carrara.

Fisheries.—The fisheries contribute largely to the supply of food in Italy. The most considerable are those for the tunny, a very large fish, and the anchovy, which is very small. These are conducted on a very large scale by joint stock companies, composed of almost all the inhabitants of the coasts where they are carried on, and more particularly along the vast extent of the Neapolitan shores. The lakes and rivers likewise yield a considerable quantity. The tunny is a gregarious fish, shoals of which enter the Mediterranean early in the year, and are caught in great abundance with nets, on the Italian coasts, in May, June, and July. The anchovy fishery is chiefly carried on for the sake of foreign trade; the fish are caught in shallow water in March, April, and May, and the curing of them occupies about a month. Sword fish are also taken with the harpoon, in the straits of Messina, and sometimes in the tunny nets; their flesh is esteemed very delicate, and when broiled resembles veal. The coast also swarms with mullets, the roes of which are converted into a sauce called botarga, which is in great request. A great variety of testaceous and crustaceous fish, among which are prawns of gigantic size, is taken along the whole coast.

Manufactures and Trade.—The manufactures of Italy are comparatively unimportant; but those of Lombardy and Venice are extensive. The manufacture of silk gives the most extensive employment; but great numbers of people are also employed in the linen and woollen trades, in both of which branches the use of machinery has been widely diffused. Woollen goods of almost every kind are manufactured in the delegations of Venice, Padua, and Como. Milan has long been celebrated for its weapons and arms, and iron work of all kinds is still extensively carried on. Besides these greater branches, most of the smaller departments are also carried on, especially those of paper, glass, gold and silver articles, and domestic utensils. The foreign trade of Lombardy is not great; that of Venice has much declined since its annexation to Austria. There are still many ships navigating the Adriatic and Mediterranean seas, under the Austrian flag, which are built and equipped at Venice.

In Tuscany the fundamental maxim of commercial legislation is, that trade and industry should be unfettered; it is, however, essentially an agricultural country, and the manufactures are unimportant. The principal articles are organzine and manufactured silks, and straw-hats and tresses. The principal articles of import trade are corn and grain from Odessa and Alexandria; superior wines from Spain and France; colonial produce, of which the consumption has greatly increased; woollen and cotton manufactures from France, England, Belgium, and Switzerland; wrought iron, chiefly from England; high bred horses, articles of fashion, hardware, &c.; wool from the Levant. The principal articles of export are, oil; silk, both raw and manufactured; kid and lamb skins; tartar, potash, charcoal, firewood, timber, corkwood, staves, bark for tanning; iron ore from Elba; marble and alabaster, wrought and unwrought; straw-hats, and straw for platting; woollen caps for the Levant; paper, and works of art; borax, alum, sulphur; worked coral, tallow, and bacon. But the free nature of the trade necessarily prevents the publication of accurate or even approximative returns of its amount and value.

In the States of the Church, the population in general is agricultural rather than manufacturing; for its manufactures there is little demand abroad; they serve only for home consumption. The principal manufacture is that of woollens of ordinary quality, of which Rome is the most important seat. Next in importance is the manufacture of hats, which are well made everywhere, but especially in the capital. There are manufactories of silk and ribbons at Rome, Bologna, Camerino, Perugia, Pesaro, Ascoli, and Ancona; and of tanned and dressed leather at Rome and other principal cities: hemp and flax are also manufactured to considerable amount, but only in public schools, orphan asylums, or private houses; the paper manufacture is considerable, and is increasing; there are many ironworks, though the ore used in them is imported; the brass pins of Urbino are famous; and there are brass, copper, and other metallic works in various places. The abundance of sulphur, and its excellent quality, has led to the establishment of vitriol manufactories at Bologna and elsewhere. It may, however, be stated generally, that the following manufactures, though they exist in the country, are not in a prosperous state, namely, woollens, silk veils, leather, gloves, cotton, and alum. Those which flourish are hats, some silk goods, paper, screws, and sulphur. The manufacture of fine cloths in Bologna has ceased. The principal articles of export are: corn, hemp, olive oil, charcoal, planks, tobacco, wood, garlic and onions, aniseed, pine kernels, saffron, bark for tanning, linseed oil, vinegar, tartar, potash, soda, wool, cheese, skins to a great amount, wrought silk, horns, bones, honey, tallow, lard, and fat. Nearly 50,000 sheep and 40,000 swine are annually exported from the provinces of Perugia and Viterbo to Lombardy, Venice, Tuscany, and Illyria, and the number would be larger, but for the heavy duties imposed by Austria. Perugia and Romagna export oxen to Tuscany, the maritime and rural districts, to Naples, altogether about 10,000 yearly. There is an export trade in horses to Naples, Tuscany, and Lombardy. With respect to imports, the character of the country must be kept in mind; not only the quality of the soil, but the fact that a chain of mountains traverses the country, making the north-east almost inaccessible to the south, so that while one part of the State is exporting, the other may be importing the same sort of articles. This arises from the difficulty, delay, and cost of carriage. Thus in the north-eastern districts there is an importation of oil from Naples and Tuscany, wood for building and fuel, and charcoal from Tyrol, Illyria, Dalmatia, and Venice. The imports, generally speaking, consist of a great variety of the productions of the neighbouring countries, and of colonial produce principally from England and France.

The manufactures of Naples are chiefly of the domestic kind. The women spin the flax, hemp, and wool; and the coarse cloths made from those substances suffice for the greater part of the population. There are manufactures of coarse woollen and cotton goods in many of the towns. Silk goods are manufactured in larger establishments than those engaged in other articles of trade. Leather

paper, hardware, glass, earthenware, and porcelain, mostly of inferior workmanship, and in small quantities, are also made in different places. The condition of the great body of the people forces them to be content with the coarsest clothing, with few articles of domestic furniture, or even cooking utensils, and to procure what they do use of the cheapest and most durable kind. No country in Europe has so little foreign trade, in proportion to its extent and population. It produces almost everything that is necessary for the use of its inhabitants, and has a very insignificant surplus to give in exchange for the few luxuries which the condition of the people requires. The foreign trade centres chiefly in the city of Naples, to which the greater portion of the surplus products are brought by small coasting vessels, and where the foreign commodities required are also procured.

Before the seventeenth century, Genoa was the centre of all the supply of manufactured silks and velvets to the other parts of Europe; but at present the manufacturing industry, so far as regards silk, is reduced to the extent of supplying the home consumption, or preparing the raw material for the manufactories of France, England, Holland, Germany, and Russia. The Sardinian States generally have sufficient manufactures to supply with silk, linen, or woollen goods, the home demand. The Sardinian silks are handsome and strong, especially the stockings; but from the want of the best kinds of machinery in producing them, they are dearer than elsewhere. Leather, iron-goods, copperware, glass, pottery, and smaller domestic articles, are also manufactured. The most valuable article of export is silk, which is mostly transported by land-carriage to France and Germany. Olive oil is also largely exported from Genoa, after being collected there from the adjoining coasts. Rice, fruit, soap, white-lead, essences, and perfumery, are also exported to some extent; and there is besides a considerable transit trade carried on through Genoa, by which the products of the other parts of Italy are exchanged for those of France, to the advantage of the commission houses in that city. The principal articles of import consist of sugar, coffee, spices, cotton-wool, manufactured cotton, indigo, cochineal, and other dying stuffs, corn, salt fish, salt, hides and leather, iron, steel, lead, copper, pitch and tar, tobacco, timber, besides many smaller articles. The trade in grain is casual, depending in a great degree upon the Swiss harvests, to supply the deficiencies of which, when they occur, corn, chiefly wheat, from Odessa and Taganrog, is imported through the Sardinian territory. The Genoese are active and enterprising, and trade to the most remote parts of the world.

INTERNAL COMMUNICATION.—The roads throughout northern and central Italy are generally well made, and kept in excellent order; and there being little navigable water communication, the practice of land-transport has become almost universal. A railway from Venice to Milan, 166 miles in length, is in the course of being made with great rapidity; it will be almost on a dead level, and will, no doubt, greatly facilitate the internal communication of Lombardy. Several great roads have been constructed over the Alps, so that communication between the north of Italy and the tramontane countries is now almost entirely divested of the character of difficulty and danger, which made it scarcely practicable even in the few places where it was attempted. The principal of these roads are, that called the *Cornice*, leading along the coast from Nice to Genoa, and in some places cut like a shelf on the face of precipices which overhang the sea; the road of Mont Cenis, extending from Lanslebourg in Savoy, to Susa in Piedmont, commenced by Napoleon, was completed by the Sardinian government, and rises to an elevation of 2,100 metres (6,773 feet) above the level of the sea; the great road over the Simplon, was constructed by order of Buonaparte, and made easily passable by carriages, but was in some places nearly destroyed by recent storms (1839-40); and the roads over the Splugen, the pass of Finstermunz, and the Wurmser Joch, leading to the Lake of Como, constructed by the Austrian government, and not surpassed, if indeed they are equalled by any undertaking of the kind elsewhere. There are also passable roads at Mont St. Gothard, Great St. Bernard, and Little St. Bernard.

Lombardy abounds with innumerable canals, some of which are navigable, but they are principally used for the purposes of irrigation. The most ancient, as well as the most considerable of these, is the Naviglio Grande, which was opened in the year 1270, and extends from the Ticino to Milan. The Nuovo Naviglio di Pavia, which was completed in 1819, extends from Milan to Pavia, where it falls into the Adda, a little above its confluence with the Po, and thus places Milan in direct communication with the seaports of Goro, Chioggio, and Venice, by means of the Po and its branches, connected by canals with the lagoons of Venice, and the rivers Adige and Brenta.

In Tuscany, the Arno is usually, though not always navigable between Florence and the sea. There are canals from Pisa to Leghorn; from Pisa to the Serchio, the lake of Bientino, and that of Ficecchio, which communicates with the Arno; parts of the Serchio, Bizenzio, Ombrone, and other rivers, are also navigable.

TOPOGRAPHY.—Italy is divided, into seven independent States, which we shall now proceed to describe in the following order: 1. States of the King of Sardinia; 2. The Lombardo-Venetian kingdom, or kingdom of Lombardy and Venice; 3. The duchy of Parma; 4. The duchy of Modena; 5. The Grand-duchy of Tuscany; 6. The States of the Church; 7. The kingdom of Naples; 8. The islands of Sicily, Malta, Gozo, and Comino.

§ 1. *States of the King of Sardinia.*

The Sardinian dominions consist of two distinct portions, the continental and the insular. The latter comprises the Island of Sardinia; the former occupies the north-western portion of Italy, adjoining France and Switzerland, and consists of three distinct parts; 1. The Principality of Piedmont, the Duchies of Aosta and Monferrat, the Lordship of Vercelli, the County of Asti, the Marquisate of Saluzzo, a part of the Duchy of Milan, and the imperial fiefs of Canavese, all in the basin of the Po, and forming the upper or western part of Lombardy; 2. The Principality of Nice and the Duchy of Genoa, lying along the Mediterranean sea, and bounded on the west and north by the Alps and Apennines; 3. the Duchy of Savoy, on the north-west side of the Alps, beyond the proper limits of Italy.

The Continental States contained in 1818, 3,439,000 inhabitants; and in 1839, about 4,700,000. There are 72 towns and 2,632 villages. Institutions for the support of the poor, the relief of the sick, &c. are very numerous; and there are no less than 18,365 children maintained in foundling hospitals. The financial system is one of the best regulated in Europe. A yearly budget is drawn up; and there is every year a surplus of revenue. The estimate of revenue for 1839 amounted to 73,600,000 lire (£2,913,333), and of expenditure, to 74,474,000 (£2,946,678), but the revenue always produces from four to eight millions beyond the estimate. Salt and tobacco are royal monopolies. The public debt amounts to 152,000,000 lire (£6,016,666, 13s. 4d.), and the interest of which is punctually paid; and the securities enjoy great confidence, and rarely appear in the market. The government is vested absolutely in the king, who is assisted by a council of state, consisting of a president and fourteen ordinary members. In each province the sole power of government is placed in the hands of an intendant without a council to controul him. Inferior intendants are appointed to the towns and

districts. The system of education is in a very low condition; elementary schools are still wanting in many places, and, where they exist, they are under the superintendence of ignorant and ill-paid teachers. The clergy are endeavouring to obtain the exclusive direction of public instruction, and to regulate it entirely in conformity with their own views. These they proclaim to be holy, Christian, and anti-revolutionary; but many complain that every advance of science is looked upon by them with jealousy, that freedom of opinion is treated as heresy, the ignorance of the people considered as advantageous to the government, and passive obedience lauded as the highest degree of virtue. There is in Turin one principal university, with four faculties; and there are secondary universities at Chambery, Asti, Mondovi, Nice, Novara, Saluzzo, and Vercelli, either for the study of medicine only, or for medicine and jurisprudence. Chambers of commerce and of agriculture have been established at Turin, Genoa, Chambery, and Nice; which are composed of landowners, bankers, merchants, and manufacturers. From time to time, public exhibitions take place of the productions of the national industry. The Piedmontese are distinguished above all the other Italians for their energy of character, their extraordinary industry, their devotion to literary inquiry, the regularity of the state economy, the efficiency of their army, and the activity of the people. — *Raumer's Italy.*

The continental territory is divided, for administrative purposes into eight general intendancies, subdivided into forty sub-intendancies. The general intendancies are likewise co-extensive with the eight military divisions of this part of the kingdom.

Names of the Gen. Intend.	*Cities, Towns, &c.*
Torino,	Torino (*Turin*), 114:* Venariareale, 3; Stupinigi, Superga, Rivoli, 5; Chivasso, 7; Carignano, 7; Moncalieri, 7; Biella, 7; Ivrea, 8; Caluso, 5; Locana, 5; Pinerolo, 12; Fenestrelle, 1; Villafranca di Piedmonte. 8; Susa, 3; Exilles, 1; Giaveno, 7.
Cuneo,	Cuneo or Coni, 18; Busca, 8; Fossano, 13; Chiusa, 5; Alba, 7; Bra, 11; Mondovi, 16; Cherasco. 8; Saluzzo, 12; Savigliano, 15; Barge, 8; Racconigi, 10.
Alessandria,	Alessandria, 35; San Salvadore, 5; Valenza, 6; Asti, 22; San Damiano, 6; Acqui, 5; Nizza, 3; Casale, 16; Tortona, 9; Caltelnuovo, 6; Voghera, 11.
Novara,	Novara, 15; Borgomanero, 6; Mortara, 4; Vigevano, 12; Domo d' Ossola, 1; Pallanza, 2; Arona, 2; Varalla, 5; Borgo-Sesia, 3; Vercelli, 15; Trino, 7.
Aosta,	Aosta, 6; Donnas, 1; St. Vincent, 2; Courmayeur, 1.
Nizza,	Nizza (*Nice*), 26; Villafranca, 3; Sospello, 4; Oneglia, 5; Porto-Maurizio, 5; San Remo, 11; Vintimiglia, 5.
Genova,	Genova (*Genoa*), 113; Voltri, 7; Savona, 12; San Remo, 15; Cairo, 3; Albenga, 4; Finale-Marina, 3; Novi, 10; Gavi, 1; Bobbio, 3; Chiavari, 10; Spezzia, 8; Sarzana, 8; Porto-Maurizio.
Savoia, (Savoy)	Chambery, 11; Aix, 3; Montmeillan, 1; Les Eschelles, 1; L'Hopital, 1; Conflans, 2; St. Julien 1; Thonon, 4; Bonneville, 12; Cluse, 2; Annecy, 6; St. Jean-Maurienne, 3; Lesseillon, Montiers, 2; Faverge, 2.

1. *Intendancy of Torino.* — Torino (Turin), the capital of the kingdom, is situate on the left bank of the Po, near its confluence with the Dora Riparia, and is one of the most regularly-built cities in Europe, particularly in the new town, which is called Nuovo Torino. It contains about 110 churches and chapels, some of which are remarkable for their architecture, and the splendour and taste of their ornaments, though now little calculated to strike the traveller by their magnificence. Turin is the see of an archbishop, and the seat of the senate of Piedmont, or supreme civil tribunal for the provinces of Turin, Coni, Alessandria, Novara, and Aosta; and has also a fine mint. In respect of its scientific and literary establishments, Turin holds the first rank among the cities of Italy; of these the principal are, the university, the best frequented in Italy; the military academy, with 33 professors and eight masters; the royal academy of sciences, one of the most celebrated in Europe; the royal agrarian society; the royal academy of the fine arts; the royal historical society; the philharmonic academy; the library of the university, one of the richest in Italy; the superb museum of Egyptian antiquities, containing upwards of 8000 articles, chiefly collected by M. Drovetti, and considered by Champollion as the first in Europe in respect of historical monuments; the fine botanic garden of Valentino; and the hydraulic building (edificio hydraulico), a unique institution, where in the months of May and June a course of lectures is given on hydraulics, illustrated by experiments with large masses of water; and the experimental garden of the agricultural society, which also contains rich collections of objects of natural history, agricultural implements, and machinery, and a library of the best works on agriculture and botany. There are several walks round Turin remarkable for their beauty; and in the delightful neighbourhood rises the chain of heights named the *Collina*, adorned with superb villas, and within a radius of a few miles are several small towns and places both beautiful and interesting, as the royal palace of *Stupinigi*, one of the finest summer houses in Europe; the *Venaria reale*, a small town, with a veterinary school, a riding school, and a stud; *La Superga*, five miles from the city, a magnificent church built on an eminence, from which there is a fine view; it is now the mausoleum of the royal family. *Aglie, Rivoli, Moncalieri*, three small towns, with royal palaces or chateaux; *Chieri*, a busy little town on the slope of a hill, which in the middle ages, acted a conspicuous part among the republics of Upper Italy; and the *Villa Madame*, a royal pleasure house, with fine gardens and terraces. Population of the city exceeds 114,000. To the south-west of Turin are the three valleys of the Vaudois or Waldenses. *La Tour*, the chief town, is 36 miles from Turin, and 14 from Pinerolo. They now contain only thirteen parish churches.

2. *Intendancy of Cuneo.* — Cuneo or Coni, a large episcopal city, with considerable trade, 50 miles S by W. of Turin, formerly an important fortress, the works of which have been demolished. *Fossano*, an episcopal city, noted for its baths, silk works, and a royal academy of the Belles Lettres. *Vinadio*, a small town, noted for the baths, and for an argentiferous lead mine in its vicinity.

3. *Intendancy of Alessandria.* — Alessandria, a large town, and recently one of the principal fortresses in Europe, situate on the right bank of the Tanaro, near its confluence with the Bormida. It is well built, has numerous churches, palaces, and hospitals, with manufactures of cloth and linen, and some trade. The strong citadel still remains, but all the rest of the fortifications have been demolished. To the south-east of the town is the village and battle field of *Marengo*, where Buonaparte gained a great victory over the Austrians in 1800.

4. *Intendancy of Novara* — Novara, an episcopal city, with considerable trade and an industrious population, 30 miles W. of Milan. *Arona*, a small but well-built commercial town, on Lake Maggiore; near which is a colossal statue of San Carlo Borromeo, a native of the town, erected by the people of Milan in 1697. The statue is 66 feet high, and raised upon a pedestal of 46 feet. The head, hands, and feet are cast; but the drapery, and the book which he holds in his hand, are formed of sheet copper, set on timber framing. The work is beautiful and well-executed, and contains a staircase which

* The figures denote *thousands.*

leads to the top. *Vercelli*, an archicpiscopal city, formerly rich and flourishing, with some fine buildings and a public library.

5. *Intendancy of Aosta.*—AOSTA, a small episcopal city, situate where the roads of the Great and the Little St. Bernard meet, contains a Roman triumphal arch, and the remains of an amphitheatre. *Gressan*, a small town, with rich iron mines. *Pré-St. Didier*, a small place, near Mont Blanc, with warm ferruginous springs, frequented by the Piedmontese. *Courmayeur*, at the head of the Val d'Aosta, with mineral springs.

6. *Intendancy of Nizza.*—NIZZA (NICE), an episcopal city, 100 miles S. by W. of Turin, in a delightful situation at the mouth of the Paglione, at the foot of an amphitheatre of hills, which are cultivated like a garden, and covered with country houses, and orange and lemon groves. Nice is the seat of a bishop, and of a judicial senate or tribunal of appeal; and has a theatre, some fine public buildings and baths, a good harbour, upon the Mediterranean, and an extensive trade. It is a great resort for invalids, though the climate seems not very favourable; for in summer the heat is excessive, and, during winter and spring, the proximity of the Alps, and the Vent de bise, render the air frequently cold and even frosty. Nice is connected with Turin by a superb road over the maritime Alps. *Villafranca*, a small seaport town, with a harbour, where the royal galleys are stationed, a fine road, and a school of navigation. *Vintimiglia*, a small fortified town on the coast. *San Remo*, a small town, with a harbour, and considerable trade. *Monaco*, a small town on the coast, east of Nice, is the capital of a sovereign principality, but under the complete controul of the King of Sardinia. No trifling part of the prince's revenues is derived from a tax which he levies on travellers passing through his petty state. The prince resides mostly at Paris.

7. *Intendancy of Genova.*—GENOVA LA SUPERBA (GENES, GENOA), a large, strong, and commercial city, on the east side of a bay of the Gulf of Genoa, which forms a large and capacious harbour, which, though protected from the sea by two large moles or piers projecting from the opposite sides of the entrance, is not very safe, being exposed to the libeccio or south-west wind. The city is built on the slope of a hill, in a delightful situation, but few of the streets are remarkable for elegance, though they contain many large and costly palaces and public buildings. Its numerous churches are all magnificent, though not to be compared in dimensions with some of the other churches of Italy. It possesses a university with 29 professors, a marine school, a navigation school, a deaf and dumb institution, an academy of the fine arts, four public libraries, of which that of the university is the principal, and an arsenal, with building slips for the royal navy. The *Albergo dei porere* is perhaps the most magnificent poor's-house in Europe. It is sufficiently capacious to lodge 2000 persons, and serves as a refuge for the destitute, a house of correction, and a school, where every person able to work is taught some useful trade. Genoa is the seat of an archbishop, a council of admiralty, and of a judicial senate or tribunal of appeal. Besides the walls of the city, a large extent of ground surrounding the harbour is also inclosed with fortifications; and at the south-western extremity of these, and on the west side of the entrance of the harbour, is the lofty fanal or lighthouse. A part of the enclosure is considered as a free port, and displays a great degree of commercial activity. Including soldiers, sailors, foreigners, and strangers, the city is supposed to contain 113,000 souls; the garrison amounts to 6000 men. Genoa was for a long time the capital of a sovereign state, the rival of Venice in her maritime power and commerce; but her independence was lost during the French invasion of Italy; and, in 1815, the city with the adjoining territory was assigned by the Congress of Vienna to the king of Sardinia. The civic government is now vested in a great town council, which is self-elected, and a little town council, upon the latter of which the ordinary business devolves. The opposite sides of the Gulf have been long known by the names of *Riviera di Levante* and *Riviera di Ponente*, or the eastern and western shores. *Savona*, an episcopal city, with some cloth manufactures, commerce, and a small harbour, south-west of Genoa. *Voltri*, a small town, possesses the largest clothworks in the duchy. *Cogoletto*, a small village, claims the honour of being the birthplace of Columbus, and his house is still shewn. *Chiavari*, a small seaport town, with some trade, and an economical society. *Spezzia*, a small town, in a beautiful situation, at the head of the fine gulf to which it gives its name. *Bobbio*, a small episcopal city, with a celebrated library belonging to a convent, founded in the beginning of the seventh century by St. Columban, from which nearly all the palimpsests decyphered by Mai, Peyron, Neibuhr, and others were obtained. *Oneglia*, a town also on the Riviera de Ponente, only noted for its extensive olive groves.

8. *Intendancy of Savoy.*—Savoy being, as already mentioned, beyond the proper limits of Italy, no part of the preceding description can apply to it. It extends in length about 85 miles, from the lake of Geneva to the French departments of Isere and Hautes Alpes, which form its border on the south; and in breadth, from the crest of the Alps to the banks of the Rhone, below Geneva, between 50 and 60. The country is nowhere level, but on the western side some of the valleys open out to a width of several miles. The greater part of the country consists indeed of high alpine valleys, the lowest of which are more than a thousand feet above the level of the sea, and some of which are so inclosed by mountains as to be almost entirely secluded. These valleys have no other outlet than a deep gorge or chasm, through which the waters have forced a channel, but which was too narrow to admit of an entrance until the labour of man had widened the passage. As the mountains recede from the crest of the Alps, their summits fall below the line of perpetual snow; the fir grows nearly to their highest points, and the intermediate declivities, though too elevated for cultivation, afford summer pasture. A real Swiss climate prevails. Summer in its glorious garb, may often be seen in the valleys, while the surrounding hills have their sides and tops covered with snow. The atmosphere is too ungenial to produce the more delicate fruits of Italy; but in favourable spots grapes ripen, and the sides of the hills yield abundance of chestnuts. But, though changeable, the air is, upon the whole, pure and healthful. The lowest hills and slopes, and the bottoms of the valleys, are the only portions that can be cultivated by the plough or the spade. In the Maurienne and the Tarentaise, two of the most alpine districts, the proportion covered with bare rocks, stones, and glaciers, is equal to one-half of the surface capable of cultivation. The principal rivers of Savoy are, the *Isere*, which drains the valley of Tarentaise, and flows into France, after receiving on the left the *Arc*, from the valley of Maurienne; the *Arve*, which drains the valley of Chamouny, and flows through Faucigny into the Rhone, below Geneva; the *Dranse* which flows into the lake of Geneva, between Thonon and Evian. Besides the lake of Geneva, which forms the northern border, Savoy contains also the *Lake of Annecy*, ten miles in length, and from one to two in breadth, 1350 feet above the level of the sea, and 180 feet deep, drained by the rivers Thon and Fier, affluents of the Rhone; and the *Lake of Bourget*, 10 miles in length, and from 2 to 3 in breadth, and 240 feet deep, drained into the Rhone by the canal of Saviere. There is also a lake on Mont Cenis 5740 feet above the level of the sea. Savoy Proper occupies the lower part of the valley of the Isere; *Genevrino* or *Genevois*, between Geneva and Savoy; *Faucigny* or *Faussigny*, the valley of the Arve; and *Chablais*, the country along the lake of Geneva. The soil of Savoy is everywhere stony, and consequently not favourable to agriculture. Trees grow to the height of 6700 feet above the level of the sea: shrubs to 8500; vines will grow at the height of 2380; the oak at 3518; barley to 4180; the larch to 6000; the pinus cembra to 6600; the rhododendron to 7400; some plants are found on a granitic soil, at 10,600 feet; above which a few

lichens are found, up to 11,000. The Savoyards belong to the French family, and French is the language generally spoken, and, what is remarkable, with greater correctness than by the peasantry of France. The Savoyards have, in general, the character of being honest, industrious, and more civil and sociable than their neighbours, the Swiss; the women bear almost as large a share in the labours of husbandry as the men. The inhabitants of the mountains are wealthier and more industrious than those of the lower valleys, and are mostly proprietors of the ground which they cultivate. Though the peasantry are very poor, yet their condition is not abject or miserable. They are in the practice of migrating annually, at the fall of the leaf, to Piedmont and France, or even to Germany, where they pursue their respective trades, and in the spring return to the labours of husbandry. Many of them are also in the practice of proceeding to distant parts of France, and even to other countries, where they spend several years in the most active or laborious professions, and return at length to their native mountains to enjoy their savings.

Chambery, the capital, is a small archiepiscopal city, situate in a fertile and well cultivated plain, on the great road from Lyon to Mont Cenis. The streets are gloomy and crowded, and none of the public buildings are worthy of notice. It is the seat of the royal academical society of Savoy, which applies itself to agriculture, industry, and trade, and has published some interesting memoirs. The museum and the public library are the principal literary establishments. A railway has been formed between Chambery and Bourget. *Aix les bains*, 10 miles N. of Chambery, a small town in a calcareous district, with nothing to recommend it but its baths, which are supplied by two abundant springs of hot water, and are contained in a large and commodious building. *Haute Combe*, a small place noted for a magnificent abbey founded in 1125, by Amadeus III., Duke of Savoy, where several members of his family have been buried. *Les Eschelles*, a remarkable passage on the road from France, where there is a grotto or tunnel 325 yards in length and 25 feet high, commenced by the French, and completed by the present government. *Annecy*, a small and ill-built episcopal city, with 5000 to 6000 inhabitants, numerous manufactories of cotton thread, printed linen, and glass, and iron mines in its vicinity. *Montiers*, a small town with a mineralogical school. *Conflans*, a town with a royal foundry supplied with lead and silver from the mines of *Pesay* and *Macot* in the neighbourhood. *Lesseillon*, a fortress recently erected to defend the frontier on the side of France. *Chamounix* or *Chamouny*, a priory and hamlet, 40 miles S.E. of Geneva, 3463 feet above the level of the sea, situate in a secluded valley 12 miles long and one in width, surrounded by glaciers and lofty mountains, among which rises Mont Blanc, the highest of the Alps. It is from Chamouny that the ascent of Mount Blanc is usually made. *Bourget*, an ancient town at the south-western extremity of the lake to which it gives its name, is now connected with Chambery by a railway.

Island of Sardinia.

This is a large island in the Mediterranean Sea, between 38° 50′ and 41° 20′ north lat., and 8° and 10° east longitude, being 167 miles in its greatest length, and 90 in its greatest breadth, and having an area of 9500 square miles. The interior is occupied by two chains of mountains running north and south, with an elevated valley between them. The eastern chain, the principal part of which is named the *Gimargentu mountains*, is the higher, and rises, in *Monte Schiuschiu*, to 6000, and in the *Lynbarra mountains* to 3768 feet; while the western chain probably nowhere exceeds 3000. The valleys are numerous but very narrow, and are drained by a number of rivers, none of which are navigable. In some places, particularly at Oristano, on the western coast, are low marshy tracts, which are extremely unhealthy. About a third of the surface is covered by forests, a considerable portion of which is oak, and well adapted for ship-building. The predominating formations are primitive and transition, the rocks being granite, mica-slate, clay-slate, and limestone. On the southern and north-western coasts are considerable deposits of tertiary limestone, in connection with which trachyte and volcanic rocks appear. The island contains rich mines of silver, copper, lead, and iron, but a mistaken policy prevents their being wrought to advantage; the working being cramped by the most absurd regulations. Besides the space occupied by lakes, marshes, and torrents, the sandy or stony districts occupy more than a third of the island; an equal extent may be assigned to forests and pastures; the remainder is laid out in corn-fields, vineyards, olive-grounds, and gardens. Grain is cultivated to such an extent as to afford a surplus for exportation; the wines are reckoned equal to those of Spain, and the olives are not inferior to those of Genoa and Provence. The salt-works and the tunny fishery are also important objects; but till lately the island was much neglected, and the people were in a very degraded state. The sojourn, however, of the Royal family in Sardinia, during the period of their expulsion from Italy by the French, made its princes better acquainted with the condition and the wants of its inhabitants; and the reign of the late King Charles Felix was marked by the special care which he bestowed on the affairs of the island. In 1820, an edict of Victor Emmanuel authorized the enclosing of common lands, which extended over the greater part of the island and were nearly useless. This permission has been largely acted upon, and many of the enclosed tracts have become well cultivated estates equal to the best in Piedmont. King Charles Felix directed that in every commune, or parish, there should be a school for the gratuitous instruction of the peasantry in reading, writing, arithmetic, the church catechism, and the elements of agriculture. In 1820, out of the whole number of 392 villages, 360 were already provided with such schools, and in each of the ten districts of the island there are normal schools, attended by upwards of 6600 students. In 1836 feudal jurisdictions were abolished, and the courts of law placed under the direct control of the State. In 1838 all feudal rights were abolished, feudal services were ordered to be converted into money payments, and the land to remain free property or be converted to the use of the Crown. In September 1838, a law was promulgated "to establish a free and unlimited system of property, and to relieve the land from all burdens, bonds, and obligations that may appear to be of an intolerable character;" and in February 1839, a more important law was passed, the object of which is to define the nature of property, and secure a more extensive cultivation of the land. The want of inland communication was severely felt; to remedy which inconvenience, a great carriage road was begun in 1823, and completed in 1829, extending from Cagliari to Oristano on the western coast, and thence, inland by Bonoro and Sassari to Porto Torres on the Gulf of Asinaria, where the mails and Government dispatches are landed and embarked to and from Genoa. The whole length of the road is about 145 miles; about 6000 workmen were at times employed upon it, and the cost to the Government was about £160,000, part of which was defrayed from the King's private purse. The northern division of the road passes through high mountainous tracts, reaching in some places the elevation of 2000 feet above the level of the sea; and besides the nineteen towns or villages which occur along its line, there are houses of refuge in the most solitary places, where the keepers of the road reside. The people of the interior have now become anxious to establish at their own expense cross roads in every direction to communicate with the main line; and the Stamenti, or Parliament of the island, have granted money for the purpose of making other high roads leading from the central one to the eastern and western coasts. The laws also, which were the productions of various epochs, differing in the various districts, and often clashing, have been digested into a new code, all their anomalies and obscurities have been removed, and their deficiencies supplied. The beneficial effects of these measures soon became apparent on the minds of the people,

more particularly in the decrease of crime, most of which originated, as among all uncivilized people, in violence, jealousy, or revenge. This was especially the case in the inland mountain districts of Barbagia and Gallura, while robbery on the roads or in houses was very rare, and in many parts unknown. The population of the island exceeds half a million. The people are brave, high-spirited, and generally hardy and robust, except in the unwholesome plains, as at Oristano, where the malaria fever is very prevalent and destructive. The Government is vested in the King, who is represented by a viceroy, assisted by the Stamenti, or Parliament, which consists of three estates; the first or ecclesiastical, which comprises the bishops, abbots, and chapters; the second, or military, which comprises the nobles; and the third, or royal, formed by the counsellors of the seven cities. But their powers are limited chiefly to the raising of taxes; and every three years a junto of the deputies of the three orders grants to the Government certain contributions or donativi, which the King demands by circular letters. The island is divided into ten provinces, namely, *Cagliari*, *Busachi*, *Iglesias*, *Isili*, *Lanusei*, *Nuoro*, *Sassari*, *Alghero*, *Cuglieri*, and *Ozieri*. The principal employment of the people is agriculture, and the enclosed lands are generally well cultivated. Grain was formerly the principal article of export, but its value has been greatly reduced by competition with Odessa. The horses are of a good breed, but many of them are wild; and, previously to the late improvements, of the estimated number of 470,000 beeves, no less than 350,000 were wild, and the whole of the sheep, nearly a million in number, were in the same unreclaimed state. The beef is of excellent quality; the mutton is only tolerable; but the pork, especially in winter, is the finest in Europe. There was, however, even then, a considerable exportation of saltmeat and cheese; salt, made by evaporation in the salines of Cagliari, Palmas, and Oristano, and fish, formed also an important part of the exports. (*Foreign Quarterly Review*, XII. *Raumer's Italy*, I.) Besides the coast fisheries, the lakes at Oristano, Cagliari, and Porto Pino, abound with fine mullet, bream, eels, and other fish, which, being carefully fattened, are a staple article of consumption and commerce, and afford considerable profit to the proprietors. There are also coral fisheries, the best of which are on the west and south coasts, where two or three hundred boats arrive annually from Naples and Genoa for the purpose of fishing it, paying only a small duty for anchorage, and an impost of about five per cent. on the produce. The fishery begins in March and ends in October, each boat collecting coral to the value of about £300, at the rate of 6¾d. per English pound weight. Around Cagliari are three natural salterns, namely, Molentargius, Spiaggia di Mezzo, and Rollone; two, which are artificial, belonging to Government, the whole capable of producing annually 50,000 tons. The expense of collecting the salt is little more than 6s. a ton; but the King makes the Sardinians pay 20s., and his continental subjects £10 for that quantity. Tobacco is also a royal monopoly, and is grown by licence. Linseed and flax are exported to a considerable amount; silk, cotton, madder, and barilla are produced in small quantity; but are capable of being greatly extended. (*Macgregor's Report*, 70, 1, 2, 3.)

CAGLIARI, the capital, situate on the shore of a deep bay on the south-east coast, is a large, but ill built, ill paved, and crowded town, with 27,000 inhabitants and considerable trade. It is also the see of an archbishop, and possesses a university, which is well attended. *Sassari*, in the north-western corner of the island, is a fine town, with a university, and 18,000 inhabitants. The other principal towns are *Oristano* or *Oristagni*, which has a fine harbour, and flourishes by the tunny fishery and the export of wines produced in the neighbourhood, *Bosa*, and *Alghero*, all on the western coast, each with about 5000 inhabitants; *Iglesias*, *Tempio*, and *Quarto*, in the interior, each with about the same number. The smaller islands around Sardinia are:—*Madalena*, *Santa Maria*, *Caprera*, on the north-east; *Mortorii*, *Tavolara*, *Molara*, *Petrosa*, *Ogliastra*, *Chirra*, *Serpentaria*, and *Cavoli*, on the east coast; *Asinara*, *Pelosa*, *Maldiventre*, *Coscia*, *San Pietro*, *San Antioco*, *Vaca*, and *Toro*, on the west coast. Sardinia contains numerous remains of antiquity, the most remarkable of which are the Nurages or Nuraghes, which are conical towers, constructed of large cubic stones without cement. The largest are from fifty to sixty feet in height and ninety in diameter. The interior is divided into three dark chambers, one above another, and communicating by a spiral stair-case. Under several of them burial places and subterraneous passages have been discovered. In some instances an outer wall of the same construction, ten feet high, encloses the terrace on which the Noraghe is built, with a circuit of 130 feet. Of these buildings more than 600 are scattered over the island. (*Foreign Quarterly Review*, XII. 252. *Balbi's Geography*, 3*me. edition*, p. 383.) Sardinia came into the possession of the Duke of Savoy in 1719, with the title of King, by grant from the great powers of Europe, in exchange for Sicily, which he had received as a new kingdom at the peace of Utrecht.

§ 2. *Lombardo-Venetian Kingdom.*

This kingdom consists of the north-eastern part of the great plain of Lombardy, with the country between the northern extremity of the Gulf of Venice and the Alps, and some Swiss valleys; and includes the eastern portion of the ancient Duchy of Milan, the Duchy of Mantua, the Valteline, Chiavenna, and Bormio, which formerly belonged to the Swiss canton of the Grisons; some fractions of Parma and of the States of the Church, lying on the left bank of the Po; and the territory of the late republic of Venice. It now forms an integral part of the Austrian empire, under the government of a viceroy; and is divided, for administrative purposes, into the two governments of *Milan*, or *the Lombard Provinces*; and *Venice*, or *the Venetian Provinces*; each of these being subdivided into delegations, as stated in the following table. In the capital of each delegation is a court of first instance for civil and criminal business; in Milan and Venice are courts of appeal for the two governments, and at Verona a high court of revision is established for the whole kingdom.

I. GOVERNMENT OF MILAN.

Delegations.	*Cities, Towns, &c.*
Milano, . .	MILANO, 160.* Simonetta, Linterno, Rho, Monza, 16. Desio, Lainate, Inverigo, Gallarate, 4. Saronno, Somma, Gorgonzola.
Como, . . .	Como, 16. Torno, Fino, Bellagio, Bellano, Menaggio, Lecco, 2. Colico, Gravedona, Dongo, Varese, Angera, Laveno, Porto, Luino.
Sondrio, .	Sondrio, 4. Tirano, 2. Chiavenna (Cleven, Cleves), 3. Bormio (Worms,) 1.2. San Martino, Morbegno (Morben.)
Pavia, . . .	Pavia, 24. La Certosa, Buffalora, Abbiategrasso, Binasco, Belgiojoso.
Lodi, . .	Lodi, 16. Crema, Codogno, Soncino, San Colombano, 5.
Bergamo, .	Bergamo, 32. Alzano Maggiore, Zogno, 2.5. San Pellegrino, San Salvatore, Gandino, Trescore, Romano, 3. Martinengo, 3. Caravaggio, Treviglio, 6. Clusone, 3. Edolo, Breno, 2. Bieno, 2. Lovere, 4. Pisogne, 3. Malonno.
Brescia, . .	Brescia, 34. Chiari, 8. Lonato, 6. Rovato, 5. Orzi Nuovi, Pentevico, 5. Gardone, 1.4. Desenzano, 3.6. Toscolano, Salo, 4.5. Bagolino, 3.7. Montechiari, 6. Iseo, Idro, Lumezzano, Pieve, 1.3. Gavardo, 1.9. Castenedolo, 4.5. Leno, 4. Travagliato, Verolanuova, 4. Calcinato, 3.

* These figures denote *thousands*; the decimals, *hundreds*.

Cremona, . Cremona, 27. Casal Maggioro, 5. Pizzighettone, 4. Castelleone.
Mantua, . . Mantua, 28. Pietole, Revere, Sabionetta, 6. Bozzolo, Castiglione, 5. Delle Stiviere, Peschiera, 1.5. Viadana, 14. Asola, Ostiglio, Gonzaga, 13.

II. GOVERNMENT OF VENICE.

Venezia, . VENEZIA (VENEDIG, VENISE, VENICE), 103. Murano, 4. Burano, 5. Mazzorbo, Torcello, Altino, Jesolo, Caorle, Concordia, Portogruaro, 2.9. Eraclea, S. Dona di Piave, Poreglia, Lazzaretto-vecchio, Malamocco, Palestrina, Chioggia, Brondolo, Cavarzere, Loreo, Ariano, Fusina, Malghera, Mestre, La Mira, 2. Dolo, Stra.
Padova, . . Padova (Padua), 51. Abano, 2.6. Montegrotto, Teolo, 2.7. Luvigliano, La Battaglia, 2.7. Cattajo, Arqua, Saonara, Pieve di Sacco, Conselve, Monselice, Ponte di Brenta, Noventa Padovana, Mirano, Sala, Campo San Pietro, Loreggia, Piazzola, Este, Montagnana.
Vicenza, . Vicenza, Costosa, Brendola, Montecchio Maggiore, Camisano, Cittadella, Bassano, Angerano, Marostica, Nove, Asiago, Schio, Magre, Tretto, Valle, Velo, Tiene, Malo, Valdugno, Reccoaro, Arzignano, Lonigo, Montebello, Barbarano.
Verona, . . Verona, 47. Bussolengo, Azzano, Vilafranca, Vallegio, Isola della Scala, Zevio, S. Bonifacio, Arcole, Soave, Caldiero, Illasi, Badia Calavena, Vestena, Ponte di Veja, Monte Bolca, Lazise, Rivoli, La Chiusa, Cerea, Legnago, Cologna, Caprino, Incaffi, Bardolino.
Rovigo, . . Rovigo, 9. Adria, Lendinara, La Fratta, Badia, Canda, Occhiobello, Crespino.
Treviso, . (Polesina.) Treviso, La Follina, Oderzo, La Motta, Porto Buffole, Conegliano, Ceneda, Serravalle, Tarzo, Monte Belluna, Lovadina, Asolo, Maser, Crespano, Possagno, Valdobbiadene, Castelfranco.
Belluno, . Belluno, 11. Capo di Ponte, Longarone, Perarolo, Cadore, Auronzo, Agordo, Alleghe, Fonzaso, Feltre, Mel, Sedico.
Udino, . . (Friuli.) Udino, 20. Campo Formido, San Daniele, Spilembergo, Maniago, Aviano, Polcenigo, Sacile, Caneva, Pordenone, Cordovado, Codroipo, Passeriano, San Vito del Tagliamento, Latisana, Palma-nova, Marano, Cividale, Moggia di Sotto, Ponteba, Ampezzo, Tolmezzo, Cercivento, Gemona, Osopo, Venzone.

. MILANO (MEYLAND, MILAN), the capital of Lombardy, is situate on the river Olono in the centre of a large plain, noted for its beauty and richness. Milan has no fine squares, and many of the streets are narrow and crooked; it contains, however, some wide and spacious streets, which, with the great number of elegant houses and palaces, and its public buildings remarkable for their massiveness and their architecture, entitle it to rank among the finest cities of Italy. It is intersected by three navigable canals, one of which extends to Pavia; its climate during winter is damp and cold, in summer it is oppressively hot, and in autumn and spring, often damp and unwholesome. The city is surrounded by broad ramparts, planted with large trees, which afford ever-varying prospects. The population amounts to about 160,000. The principal object of attraction is the Duomo or Cathedral, a very large building of mixed gothic, built of white marble, and profusely adorned with pinnacles and statues. It was commenced in 1385 by John Galeazo, first Duke of Milan, but remained unfinished till the reign of Napoleon, who ordered it to be completed, and both he and his successors, the Emperors of Austria, have devoted large sums to this purpose. It measures in length 486 feet, in breadth, 298, and to the top of the cupola, 258; but it has neither domes nor towers to relieve its massiveness. In a fine subterranean chapel, which is sumptuously adorned, rests the body of San Carlo Borromeo, in a crystal sarcophagus, ornamented with silver gilding. The church of St. Ambrose, the oldest in Milan, is an assemblage of several styles of architecture, from the days of the Emperor Theodosius, who did penance before its gates. Among the other public buildings may be mentioned, the royal and archiepiscopal palaces, the theatre della Scala, one of the largest in Europe; the lazzaretto and great hospital, the latter of which contains 2200 beds; the mint, the royal palace of the arts and sciences, the observatory, the public library, the botanic garden, the academy of the fine arts, and the magnificent triumphal arch which serves as the terminus of the road of the Simplon. Milan contains, besides these, a number of other scientific and literary establishments; is the residence of the Viceroy of Lombardy, and the see of an archbishop; and from its favourable situation, which places it in communication with the great roads of the Simplon, St. Gothard, the Splugen, the Stelvio, and the canals of the Adda and the Ticino, has become the general entrepot of the trade of northern Italy. Its commerce embraces not only the agricultural produce, but also the productions of the numerous manufactories of printed calicoes, ribbons, veils, velvets, and handkerchiefs; goldsmith work, gilt bronze ornaments, artificial flowers, embroideries, and lace. It has also of late acquired considerable importance even in matters of exchange, and its printing and bookselling business is the most important in Italy, the only rivals being Venice, Turin, and Florence. At *Monza*, on the Lambro, three leagues north of Milan, Charlemagne was crowned King of Lombardy with the iron crown of the Lombard kings, which is still preserved along with several other royal relics in the cathedral. Monza contains about 16,000 inhabitants, a fine palace of the Viceroy, and a very rich botanic garden.

Como, a fine episcopal city, at the south-western extremity of the cognominal lake, with flourishing manufactures of cloth, silk stuffs, physical and optical instruments, a large cathedral, one of the finest in upper Italy, and 16,000 inhabitants. In its immediate vicinity is the *Villa Odescalchi*, so large and magnificent, as to be fit for a royal residence. *Lecco*, on the eastern branch of the lake, at its southern extremity, is a small town with 2000 inhabitants, an iron foundry, and considerable trade. *Dongo* a busy commercial town, with 3000 inhabitants, many of whom are employed in the manufacture of physical and musical-instruments, which are carried to every country.

Sondrio, on the Adda, a very small town, with 3000 inhabitants, in the Valteline. *Bormio* (German, *Worms*), with 1600 inhabitants, in an elevated position, is only noted for the baths of St. Martin in its vicinity, and for its connection with the great military road over Monte Stelvio, or the Stilfersjoch, which commences at these baths, and reaches the elevation of 2814 metres (9232 feet) above the level of the sea. *Chiavenna* (German, *Cleven*, French, *Cleves*), upon the Maira, a small town, with 3000 inhabitants, who carry on a considerable traffic along the three great roads with which it is connected; that which leads by the lake of Lecco to Milan, that of the Engadine, which leads to St. Moritz, and that of the Splugen.

Pavia, an episcopal city of moderate extent, near the left bank of the Ticino, is more remarkable for its antiquity and its historical celebrity as the capital of the Lombard kings, than for its present importance. It possesses a celebrated university, with three colleges, a botanic garden, and several other scientific and literary establishments. Population about 24,000. Four miles from Pavia is the monastery of the *Certosa*, suppressed by the Emperor Joseph, considered to be the most tasteful and most richly adorned building in Italy. Including its church and other buildings, it occupies sufficient space for a large village. Its church is encrusted with precious marbles, and an annual allowance is made by the government for keeping it in repair.

Lodi, an episcopal city on the right bank of the Adda, over which there is an ancient bridge, memorable for "the terrible passage" effected by Buonaparte in 1796. The citizens manufacture

a large quantity of pottery, are engaged in the spinning of silk, and carry on a great trade in Parmesan cheese, which is all made in the adjoining district.—Population 16,000.

Bergamo, a large town with 32,000 inhabitants, occupying a singular situation, partly on a scarped height, and partly round it, has a flourishing trade and numerous manufactories of silk. During the last eight days of August and the first days of September a great fair is annually held here, at which business to a great amount is transacted. The place in which the fair is held is a building of hewn stone, containing more than 600 shops, symmetrically disposed round a large area, in the centre of which is a fountain.

Brescia, an episcopal and commercial city, situate in the middle of a fertile and finely cultivated plain, 50 miles east of Milan, with 34,000 inhabitants, who are chiefly employed in cutlery and the manufacture of arms and silk. At the southern end of the lake of Garda, near *Desenzano*, is the fort and peninsula of *Sermione*, where the ruins of the villa of the poet Catullus are said to be still seen.

Cremona, a large and fine episcopal city on the left bank of the Po, 50 miles S.E. of Milan, is chiefly remarkable for the manufacture of fiddles and fiddle-strings. Its duomo or cathedral is one of the largest and most interesting Gothic churches in Italy, with a very high tower, and a zodiac sculptured on its façade. *Pizzighettone*, on the Adda, is only noted for its fortifications, which, of late, have been very considerably augmented.

Mantua, a large and fine episcopal city, is situate in the middle of a lake formed by the Mincio, and connected with the mainland by causeways. Its extensive fortifications and its situation in the lake, entitle it to rank among the principal fortresses in Europe. The atmosphere, however, is unwholesome.—Population 28,000. In the vicinity are, the magnificent Gothic church of *Santa Maria delle Grazie*, on the lake, almost entirely covered with votive tablets, and visited annually by so many as from 80,000 to 100,000 pilgrims; *Pietole*, a fort on the right bank of the Mincio, constructed to maintain the inundation which surrounds Mantua, and makes it inaccessible except at four points, defended by formidable batteries, viz. St. George's Bridge, the Citadel, the Pradella Gate, and the Port of Pietole, which is supposed to occupy the site of *Andes*, the birth-place of Virgil; *Peschiera*, a fortress on the Mincio, at the outlet of the Lake of Garda.

VENEZIA (VENEDIG, VENISE, VENICE), an ancient city, in a most singular situation, being built upon a cluster of islands in the midst of a salt lagune, or shallow lake, separated from the sea by a long strip of firm sand, through which there are several openings for the tide, which alternately covers and lays bare a considerable portion of the bottom of the lagune. Venice is considered as one of the finest cities in Europe, though its streets are very narrow, and in most cases only wide enough for foot passengers. But its chief thoroughfares are the canals, which intersect it in every direction, the principal of which is the great canal, 300 feet wide, extending in a long curve line through the centre of the city, and crossed near the middle of its course by the *Ponte di Rialto*, a fine marble structure of one spacious arch. In the midst of this labyrinth of streets and canals are several large piazzas or open areas, almost every one of which is adorned with a fine church or palace. The principal of these is the Piazza di San Marco, a large oblong area 562 feet by 232, surrounded by elegant buildings, and containing at its eastern extremity the metropolitan church of San Marco, a singular but splendid combination of the Gothic and the oriental styles of architecture. The piazza also contains a lofty square tower, 316 feet high and 42 feet square, with a pyramidal top, to which the ascent is made by an easy inclined plane instead of a stair. Adjoining the church is the ancient Palace of the Doge, the prisons, and other public offices of the late republic of Venice. The arsenal is likewise a very spacious structure, placed on an island three miles in circumference, and strongly fortified; it is now the head-quarters of the Austrian imperial navy, and communicates with the Adriatic by a deep channel through the lagune. Venice is seven miles in circumference, and situate about four miles from Fusina, the principal landing-place on the mainland; and is amply supplied with all necessaries, and even luxuries, though it possesses naturally neither soil nor fresh water. A railway to connect it with Milan is now in rapid progress. Great difficulty was found in carrying it across the lagune; but this has been overcome, and the work, when finished, will probably tend in some degree to restore the prosperity of Venice, which has rapidly declined since the downfall of the republic in 1797. In 1830 Venice was declared a free port, and a decided increase has since taken place in its maritime trade; but the magnificent expectations which that act excited have not been realized, though the progress of decay seems to have been arrested, and improvement is slowly advancing. The population is about 103,000, without including the garrison, which is inconsiderable. Venice is the residence of a Catholic patriarch, an Armenian bishop, and a Greek bishop; and the Viceroy of Lombardy usually spends a part of the winter here. In the neighbourhood of Venice are, *San Michieli di Murano*, a pretty islet, with a fine marble church, and the convent of the Camaldules, to which it belongs; *Murano*, a small town, with glassworks, which for several centuries were in great repute, though their productions are now inferior to those of France, England, and Bohemia; *San Andrea di Lido*, a small islet, with a fort, which defends the harbour of Lido, now accessible only by small vessels; *San Lazzaro degli Armeni*, an island, inhabited by Armenian monks, who devote themselves to the education of their countrymen, and have published several useful works in their national tongue; they also publish a weekly journal, which is circulated throughout the East. *Malamocco*, a small town on the west side of the *Lido*, or bank which defends Venice from the sea. Its harbour, defended by two forts, has been much improved by a great bulwark or dike, which, when completed, will be 1400 metres (4593 feet) long, and will have cost £60,000. Malamocco has only about 800 inhabitants, most of whom are employed as pilots. *Palestrina*, a town to the south of Venice, on a long narrow island, named the Litorale di Palestrina, with 7000 inhabitants, who are employed in navigation, fishing, and cultivating gardens, which supply Venice and other places with fruit and vegetables. It was along the outside of this Litorale that, during last century, the Venetians constructed, at great expense, the magnificent bulwark called the Murazzi, to protect their city from the sea. *Chioggia*, an episcopal city on an island of the lagune, connected by a long stone bridge with the Litorale di Sotto Marina. Gardening, navigation, fishing, the making of salt, and ship-building, form the principal occupation of its inhabitants, who amount to 24,000, including those of the suburbs. Two forts defend the entrance of the harbour. *Brondolo*, a miserable place with a harbour, where formerly the Adige, and now the Brenta and the Bacchiglione enter the sea. The entrance is defended by batteries; but the atmosphere of the town is so unwholesome as to have become proverbial. *Cavarzere*, a large commercial town with 7000 inhabitants, divided by the Adige. *Eraclea*, on a peninsula formed by the confluence of the Livenza and the Piave, was formerly a flourishing town, the capital of the republic, but is now completely destroyed, and almost obliterated. Here the first Doge, or Duke of Venice, was elected in 697, and the town continued the capital till 742, when the ducal residence was transferred to Malamocco. To the west of Venice is *Malghera*, a miserable place, where extensive fortifications have been erected for the military defence of the city. *Mestre*, *Fusina*, *La Mira*, and *Dolo*, considerable towns or villages on the mainland, at the terminations of the several roads and canals by which Venice communicates with the interior of Lombardy.

Padova (Padua), a large and busy commercial and episcopal city, between the Brenta and the Bacchiglione, 22 miles W. by S. of Venice. Its university has been long celebrated as one of the first in Europe, and was restored and augmented by the late Emperor Francis, who added several chairs which were wanting to complete the curriculum. There are, besides, in the city many other

scientific and literary institutions. Population above 51,000. In the neighbourhood are, *Abano*, a village frequented for its sulphureous baths; *Teolo*, a town in the Euganean hills, said to be the birth-place of Livy; and near it *Luriglano*, a summer palace of the bishop of Padua; *La Battaglia*, visited annually by great numbers of people on account of its sulphureous baths, and the amenity of its climate; and *Arqua*, a village on one of the Euganean hills, which contains the tomb of Petrarcha, and the house in which he died. *Este*, 13 miles S. by W. of Padua, one of the most ancient cities of Italy, with a population of 9000, was, during the middle ages, the residence of the Marquis of Este, one of the principal potentates of Italy, and the stock from which the Dukes of Modena and Brunswick, and the present royal family of Great Britain, are sprung.

Vicenza, on the Bacchiglione, 37 miles W. of Venice, a fine episcopal and commercial city, with 31,000 inhabitants. It was the residence of the architect Palladio, and is still adorned with several buildings erected by him. Vicenza is advantageously distinguished for the varied industry of its citizens, who are largely engaged in the manufacture of silks, of which an immense quantity is produced in its fertile and highly cultivated district. *Bassano*, 23 miles N. by W. of Vicenza, a fine town upon the Brenta, with 10,000 inhabitants, distinguished for their industry and trade. *Asiago*, a large town with 5000 inhabitants, is the chief place of a mountain district known by the name of the seven communes, whose inhabitants speak a dialect of German. The origin of its inhabitants has long been an object of antiquarian research.

Verona, on the Adige, a large commercial and episcopal city, adorned with many fine ancient and modern buildings, among which may be mentioned a Roman amphitheatre, still very perfect. Placed near the gorges of the Tyrol, and the defile of the Adige, and commanding that river by its four stone bridges; and situate between the gorges of the *Chiusa* and the heights of *Caldiero*, and supported by the fortresses of Mantua, Peschiera, and Legnago. Verona has always been a most important military position; its fortifications have been lately much enlarged. It is also noted for its fine dyeing, and carries on a great trade in silk thread both for sewing and weaving, which is spun by a great number of water mills. Population 47,000. *Arcole*, on the Alpon, in the midst of marshes, S.E. of Verona, is distinguished in history for the victory gained there by Buonaparte, over the Austrians, in 1797. *Legnago*, a well built commercial fortified town on the Adige, with 10,000 inhabitants. In its neighbourhood, between the Adige and the Tartaro, is the unhealthy canton of *Valli Veronese*, which produces an immense quantity of excellent rice. Near *Incaffi*, at the foot of Mount Baldo, is the sanctuary of *La Madonna de la Corona*, which occupies a remarkable position in a cleft of the mountain, to which the only access is by a stair of 234 steps cut in the rock; while the descent is effected by ropes 420 feet long.

Rovigo, on the Adige, a small commercial town, with 9000 inhabitants, formerly the capital of the Polesina, and now the ordinary residence of the bishop of *Adria*, a very ancient Etruscan city, which had a flourishing trade both by land and sea, during the best periods of Roman history. Its harbour and the adjacent sea have been so much filled up by the earth and mud brought down by the Adige and the Po, that it is now 20 miles distant from the coast. By the opening, however, of the canal of Porto-vico, its climate, which had been long deleterious, has been considerably ameliorated, and its territory, drained from pestilent water, is now covered with beautiful and fertile fields. It is an episcopal city, contains several remains of Etruscan and Roman antiquities, and has 10,000 inhabitants.

Treviso, upon the Sile, an episcopal city, with numerous manufactures of linen and paper, a flourishing trade, and 19,000 inhabitants. *Possagno*, a large village with 1200 inhabitants, has acquired great celebrity as the birth-place of the sculptor Canova, and for a fine temple, erected by him, in which he has united the dome of the Pantheon to the peristyle of the Parthenon.

Belluno, a small city, near the Piave, with considerable manufactures, and 11,000 inhabitants. In the vicinity, at *Capo di Ponte*, is a fine bridge, with one arch of 160 feet span. *Cadore*, near the Piave, a village with 500 inhabitants, has considerable trade, and is noted as the birth-place of Titian. *Auronzo*, a small town, with mines of oxide of zinc, or calamine, of excellent quality and of extraordinary richness. The firs of the forest of Auronzo are of an unusually large size, and supply the arsenal of Venice with masts for ships of the largest class. *Agordo*, near Cordevole, possesses copper mines, which are considered to be the richest in Italy. *Alleghe*, a village with 700 inhabitants, is noted for its forges and a great manufacture of ironmongery.

Udino, formerly the capital of the province of Friuli, a well-built episcopal city, with several literary and scientific establishments, and some manufactures of linen, silk thread, &c. Population 20,000. In its vicinity is *Campo-Formido* (or *Campo Formio*), a village with 600 inhabitants, noted for the treaty of peace concluded there between France and Austria, in 1797. *Tolmezzo*, a small town with 1200 inhabitants, the chief place of Carnia, which formerly enjoyed great privileges, was governed by its own laws, and was recently the centre of a great linen trade. It is supposed that more rain falls here than in almost any other place in Europe.

§ 3. *Duchy of Parma.*

This small State is situate in Lombardy, to the south of the Po, and extends from that river southwards to the crest of the Apennines, between the Sardinian States on the west and the Duchy of Modena on the east. It consists of the ancient duchies of Parma, Placentia, and Guastalla, with the exception of those portions of them situate to the north of the Po, and was formed into a sovereign duchy in 1815 in favour of the Archduchess Maria Louisa, late Empress of the French. Guastalla is separated from the main body of the state by an intervening portion of the duchy of Modena. PARMA, the capital, is a large and handsome city, on the Parma, with about 30,000 inhabitants, is a bishop's see. The dome of the cathedral is painted in fresco by Corregio; the finest church in the city is that of La Madonna della Steccato. There are several scientific and literary institutions, the principal of which are the university, the school of arts, the college of nobles, and the ducal library. *Piacenza (Placentia)*, near the right bank of the Po, is a large well-built episcopal city, with a ducal palace, a cathedral, several other fine edifices, and a citadel occupied by Austrian troops. Population 28,000. *Borgo San Donino*, a small episcopal city, with 5000 inhabitants. *Guastalla*, a small episcopal fortified city, with 6000 inhabitants, near the right bank of the Po, N.E. of Parma. *Fiorenzuola*, a small place noted of late years for the discovery in its vicinity of the ruins of the ancient *Velleia*, which seems to have been suddenly destroyed by a volcanic eruption, or by the fall of a mountain soon after the period of Constantine the Great. It was among these ruins that the famous Trajan table, one of the most important relics of ancient Rome, was found.

§ 4. *Duchy of Modena.*

The Duchy of Modena is situate to the eastward of Parma, and extends from the south bank of the Po to the crest of the Apennines; beyond which, the Duke also possesses the Duchy of Massa and Carrara, which reaches to the Tuscan Sea. The present sovereign is an Archduke of Austria, who acquired the duchy in right of his mother, the Duchess Maria-Beatrice d'Esté, the heiress of the ancient family of the Dukes of Modena. *Modena*, the capital, is a fine episcopal city, between the Secchia and the Panaro, with 27,000 inhabitants. The ducal palace is an elegant and majestic edifice, and

is richly furnished; the cathedral is remarkable for its tower called the Guirlandina, one of the highest in Italy, and for the wooden bucket, still preserved, which was the subject of the famous heroi-comic poem of La Secchia rapita. Modena also possesses a university, a college of nobles, a military academy of nobles, an academy or royal school of the fine arts, a royal academy of sciences, letters, and arts, a royal academy of philharmonics, and a public library. The citadel has been converted into a correctional workhouse, where manufactures of coarse cloth, linen, and ropes have been established. The other important places in the State are:—*Reggio*, 15 miles W. of Modena, an episcopal city, with 18,000 inhabitants; *Massa*, 60 miles S W. of Modena, a small episcopal city, with 7000 inhabitants; *Carrara*, a small place, noted for its quarries of statuary marble; *Mirandola*, 15 miles N. of Modena, a busy fortified town, with 6000 inhabitants; *Finale*, with 6000; *Carpi*, a bishop's see, with 5000; *Castelnuovo*, with 3000; *Sassuolo*, *Rubiera*, *Novallora*, *Canossa*, and *Correggio*, the last of which was the birth-place of the celebrated painter Allegri of Correggio.

§ 5. *Grand-duchy of Toscana (Tuscany.)*

This large territory is situate on the west coast of Middle Italy, almost entirely to the west of the crest of the Apennines; and is bounded on the north by Parma, Modena, Lucca, and Romagna, and on the east and south, by the States of the Church. The sovereign is an Austrian archduke, the cousin of the present Emperor, and the descendant of the second son of the late Emperor Leopold II., who, during the reign of his brother Joseph II., was himself for some time Grand-duke of Tuscany, and first introduced that excellent system of policy for which the Tuscan government is so distinguished. The territory contains altogether 5,221,974 English acres of taxable land, which are thus occupied: in the cultivation of the vine, 568,974; vine and olive, 389,000; arable, 839,000; wood of all kinds, 1,398,000; chestnuts, 304,000; natural and artificial meadows, 66,000; pastures, 1,574,000; various smaller products, 62,000; buildings, 24,000; upon which the government levies a nett annual revenue of about 3,150,000 lire (£103,162 sterling.) The population amounted, in 1815, to 1,169,000; in 1825, to 1,256,000; and in 1838, to about 1,500,000, with an army of from 7000 to 8000, who are levied by a sort of conscription, and serve six years. In 1835, the number of the secular clergy was 8501; of monks, 2461; of nuns, 3939; of monasteries, 133; and of convents, 69. Education has hitherto been very much neglected; and schools and seminaries for the higher branches appear to be very scanty in comparison with the number and revenues of the clergy, and especially of the monks. The country possesses two universities, which are not of great repute; on an average of late years, that of Pisa had from five to six hundred students, that of Siena from two to three hundred; the faculty of law having the largest number, the faculty of divinity the smallest. In 1828, the total revenue of the State amounted to 25,186,000 lire (£824,799 sterling), of which sum the land-tax produced 3,032,000 lire: the customs and commercial duties, 8,401,000; salt, 3,725,000; lottery, 2,309,000; tobacco, 1,577,000. Though a public debt exists, there is no entry of it in the published accounts; nor does it ever appear in the market or at the exchange, a proof that the amount is small, and the security unquestioned. The improvements in the Maremme have occasioned much extraordinary expenditure, which will probably be amply repaid.—(*Italien, von F. von Raumer; Leipzig*, 1840, II. 73, &c.) The territory is divided into five *compartimenti*, which are subdivided into *territori-comunitativi*. The following table contains the names of the compartimenti and their principal towns.

Compartimenti.	*Cities, Towns, &c.*
Firenze, . .	FIRENZE (FLORENCE), Signa, Prato, Pistoja, Pescia, Colle, Volterra, Empoli, San Miniato, Scarperia, Modigliana.
Arezzo, . . .	*Arezzo*, Anghiari, Castiglion Fiorentino, Cortona, Borgo San Sepolcro, Monte Pulciano, Chiusi.
Siena, . . .	*Siena*, Colle, San Geminiano, Montalcino, Poggibonsi, Radicofani.
Grossetto, .	*Grossetto*, Massa, Pitigliano, Orbitello; the islet *Giglio*.
Pisa, ...	*Pisa*, Livorno (Leghorn), Piombino, Pietra Santa, Seravezza, Barga, Fivizzano, Bagnone, Pontremoli, Porto Ferrajo, Porto Longone, and Rio, in Elba.

FLORENCE (FIRENZE LA BELLA), the capital of the grand-duchy, situate on the Arno, in a delightful valley, is considered as one of the finest cities in the world, notwithstanding the narrowness of some of its streets, the irregularity of some of the buildings, and the style of several of its palaces, whose construction resembles that of the fortresses of the middle ages It contains several palaces, built in a massive rather than an elegant style, as that of Pitti, the ordinary residence of the grand-duke, and the old palace on the banks of the Arno, near which is the celebrated gallery of Florence, "where stands the statue that enchants the world," and many other precious productions of the fine arts. It contains also many churches, most of which are mean and poor, when compared with those of Rome. The principal church is the *Duomo*, or cathedral of Santa Maria del Fiore, remarkable for its extent, its magnificent tower, the richness of the marbles with which it is constructed, and its dome, rivaling in grandeur that of St. Peter's at Rome, for which it served as the model. The church of San Lorenzo is celebrated for its two sacristies, and the chapel of the Medici usually styled "the wonder of Tuscany." The church of Santa Croce is the pantheon of Tuscany, and contains the tombs of Michael Angelo, Dante, Machiavelli, Galileo, Leonardo-Bruni-Aretino, Alfieri, Viviani, and other great men. Florence likewise possesses several important scientific and literary establishments; the Scuole Pie, to which is annexed the observatory; the imperial and royal school of the fine arts; the academy of the georgifili, or royal and imperial economical society; the academy della Crusca; the Italian athenæum, and Colombarian society; the Magliabechian library, the library of the Grand-duke; the Laurentian library, or library of the Medici, rich in valuable manuscripts; the museum of natural history; and the gallery or Florentine museum, which may be considered as the finest existing collection of antiquities and specimens of the fine arts. The Arno flows through the centre of the city, within which it is crossed by four bridges. The climate is cold during winter, very hot in summer, but delightful in autumn and spring. Population, in 1836, 97,548. In the neighbourhood of the city are many country houses and villas, among which are, the royal farms or *Cascini*, to which the public are admitted at all times; the *Carregi de Medici*, the favourite retreat of Lorenzo el Magnifico; *Poggio Imperiale*, and *Pratolino*, two grand-ducal villas: *Fiesole*, a picturesque village, on the top of a hill, on the site of *Fæsulæ*, an ancient and strong Etruscan city, portions of the massy walls of which still remain. *Vallombrosa*, 14 miles from Fiesole, is also worthy of notice, on account of the beauty of the country and its noble Certosa or Chartreux, which still contains some fine paintings. *Prato*, 12 miles N.W. of Florence, a busy episcopal city, with 10,000 inhabitants, a fine cathedral, and an academia petrarchesca. *Pistoja*, 22 miles N.W. of Florence, a large town, with 12,000 inhabitants, who are employed in making organs, manufacturing cloth, arms, and ironmongery. *Pescia*, a small town, 32 miles W. by N. of Florence, is noted for its paper works and silk trade. *Volterra*, 30 miles S.W., a place of great antiquity, noted for its Cyclopean walls; Its citadel, now converted into a prison; its museum of Tuscan antiquities; its salt springs, which supply a great quantity of salt; and its quarries of alabaster, the finest in Europe. *Signa*, a large village on the banks of the Arno, may be considered as the centre of the straw-hat manufacture, which is carried on to a prodigious extent.

Arezzo, 33 miles S.E. of Florence, a town with 9000 industrious inhabitants, some fine buildings, and the remains of an amphitheatre, is the native place of Petrarcha, Guida d' Arezzo, and Redi, whose houses are still shewn. *Cortona*, 12 miles S. E. of Arezzo, a small town of 3500 inhabitants, noted for the great hydraulic operations, which have changed its marshy and pestilential deserts into wholesome, fertile, and well-peopled fields; its collections of Etruscan antiquities, and its Etruscan academy. It also contains some remnants of ancient Cyclopean walls. *Chiusi*, 30 miles S. of Arezzo, in an unhealthy situation, with only 3000 inhabitants, contains numerous collections of Etruscan antiquities. *Monte Pulciano*, 10 miles N.W. of Chiusi, is noted for its excellent wine.

Siena, 30 miles S. of Florence, a large and fine archiepiscopal city, situate on three hills, in a healthy and delightful situation. It contains several fine buildings, among which, the most remarkable is the cathedral, a gothic structure, highly ornamented, and forming a historic gallery of the fine arts, from their revival in the thirteenth century to their perfection in the fifteenth. It contains a university, an academy of sciences, the only one in Tuscany, a college of nobles, a school of the fine arts, and a public library. Population 18,000. *Radicofani*, a small fortress and post-house, on the road to Rome, in a wild and desolate region, 2170 feet above the level of the sea.

Grosseto, a small town in the Maremme, 45 miles S.S.W. of Siena, noted for the great hydraulic works in its neighbourhood for draining the marshes and improving the country. Its salines produce a large quantity of salt. *Orbitello*, a very small place, celebrated among antiquaries for the necropolis of an Etruscan city, which has been discovered there, and is supposed to be that of *Subcosa*.

Pisa, an ancient but decayed and now desolate city, the capital of a sovereign republic in the middle ages, the great rival of Genoa, is situate on the right bank of the Arno, near its mouth. Several fine buildings still bear witness to its ancient splendour, among which are the cathedral, one of the largest and finest churches in Italy, and the Campanile-torto, a tower 188 feet high, of a cylindrical form, composed of seven ranges of columns, and diverging fifteen feet from the perpendicular. It is constructed with great solidity, and is already 600 years old. The Campo Santo, or burying-ground, is also remarkable for its architecture, its fine paintings, and its ancient monuments. It is covered with earth brought from the Holy Land. Pisa possesses the first university in Tuscany, with four colleges, a rich library, a museum of natural history, an observatory, and a botanic garden. Population about 20,000. The baths of *San Giuliano*, in the vicinity, attract a great number of strangers to the city; and in the neighbourhood is the *Certosa* of Pisa, remarkable for its beauty. *Seravezza*, near Pisa, has quarries of fine statuary marble, which is becoming daily of more importance, since Carrara seems incapable of supplying the quantity that is now required. *Pontremoli*, a small town in a valley of the Apennines, 60 miles N.N.W. of Pisa.

Livorno (Livourne, Leghorn), a fine modern episcopal city, situate on the shore of the Mediterranean opposite the islet *Meloria*, is one of the principal commercial towns in Europe, an advantage which it owes to its being a free port, where the productions of all countries can be landed and re-exported without restriction. One of its quarters is named New Venice, from its being intersected by a number of canals, by means of which goods are brought to the doors of the warehouses. The harbour is entirely artificial, and is formed and defended by a great mole or bulwark, and by strong military works; and outside is the road formed by sandbanks surrounding Meloria, on which the lighthouse is built. There are also building slips, on which large ships of 60 guns have been constructed. The city is two miles in circuit, and contained, in 1836, 76,397 inhabitants, of whom upwards of 20,000 are Jews, who have a synagogue, considered to be the largest and finest in Europe, after that of Amsterdam. The great square is spacious, and the Duomo or Cathedral is a noble building. Leghorn, in the fifteenth century, was only an inconsiderable port; and it was not till the middle of the seventeenth century that the liberality of its institutions towards Jews and other strangers laid the foundation of its modern prosperity, and accomplished the transfer from Pisa of the principal trading establishments. In 1645, the civic revenue was 6280 crowns, the number of inhabited houses 700, and of the population between eight and nine thousand. In 1791 the population amounted to 50,790; in 1807, to 64,095; in 1829, to 72,199; and in 1836, to 76,397. With the exception of the period of French domination the trade has been in a state of continual advancement. In 1757, its value amounted to about £166,660 sterling; in 1834, it had reached £1,733,330. *(Bowring's Report, &c.)*

Duchy of Lucca.

The Duchy of Lucca is a small maritime district between Modena and Tuscany, formed into a separate state in 1815 out of the territory of the late republic of Lucca. The duke is to succeed to the duchy of Parma on the death of the Archduchess Maria Louisa, on which event, Lucca is to be annexed to the grand-duchy of Tuscany. The only remarkable places are: — *Lucca*, the capital, an archiepiscopal city, on the Serchio, in the centre of a plain which is cultivated like a garden, with 22,000 inhabitants. The fortifications have been converted into fine walks, and a magnificent aqueduct is constructing to supply the city with water. Lucca has a university, newly established, with the title of Lyceum, a botanic garden, a public library, and the Luchese academy of sciences, letters, and arts, which regularly publishes memoirs. The environs abound with elegant villas. *Viareggio* is a small seaport town, with a considerable coasting trade, and a population of 5000. *Camaiore*, on the sea coast; *Borgo-a-mazzano*, on the Serchio; and *Corsena*, on the Lima. In the vicinity of Corsena are situate the *Baths of Lucca*, which are much frequented both by natives and strangers.

§ 6. *States of the Church.*

The States of the Church occupy the greater part of Middle Italy, extending along the Adriatic Sea, from the Po to the northern frontier of the kingdom of Naples, and being bounded on the west by the Duchies of Modena and Tuscany, and on the south by the Mediterranean Sea. The length from north to south is about 260 miles, the breadth is very various. Since 1832, the dominions of the Pope have been divided into twenty-one provinces, of which the province of Rome is styled a *Comarca*; that of Loreto, a *Commissariato*; those of Bologna, Ferrara, Ravenna, Forli, Urbino and Pesaro, and Velletri, *Legazioni*, because they are governed by legates. The delegation of Benevento, and the territory of Ponte Corvo, are entirely separated from the rest of the dominions, being situate in the northern part of the kingdom of Naples. Ponte Corvo forms part of the legazion of Frosinone. The names of the provinces, and of their principal cities and towns are stated in the following table.

Provinces.	*Cities and Towns.*
Roma. . . .	ROMA, Tivoli, Albano, Castel Gandolfo, Frascati, Subiaco, Palestrina, Ostia.
Velletri. . . .	Velletri, Terracina, Sezze, Cori.
Frosinone. . .	Frosinone, Alatri, Ponte Corvo, Veroli, Anagni.
Benevento. . .	Benevento, San Lucio.
Civita Vecchia.	Civita Vecchia, Tolfa, Corneto, Allumiere.
Viterbo. . . .	Viterbo, Montefiascone, Ronciglione, Civita Castellana, Nepi.
Orvieto. . . .	Orvieto, Aquapendente, Bagnarea.

Provinces.	*Cities and Towns.*
Rieti.	Rieti, Poggio Mirteto, Magliano.
Spoleto. . . .	Spoleto, Narni, Terni, Amelia, Norcia, Pie di Luco.
Perugia. . . .	Perugia, Foligno, Nocera, Assisi, Citta di Castello, Citta della Pieve, Todi, Gubbio
Camerino. . .	Camerino.
Macerata. . . .	Macerata, Fabriano, Recanati.
Fermo. . . .	Fermo, Porto di Fermo.
Ascoli.	Ascoli, Montalto, Ripatransone.
Loreto. . . .	Loreto.
Ancona. . . .	Ancona, Iesi, Osimo.
Urbino e Pesaro.	Urbino, Pesaro, Fano, Fosombrone, Cagli, Gubbio, Sinigaglia (Senigalla), San Leo.
Forli.	Forli, Cesena, Rimini, Savignano, Cesenatico.
Ravenna. . . .	Ravenna, Imola, Cervia, Faenza, Castel Bolognese.
Bologna. . . .	Bologna, Cento, Forte Urbano, Medicina.
Ferrara. . . .	Ferrara, Commachio, Lugo, Bagna Cavallo, Ponte di Lago Scuro.

The population amounted in 1800 to 2,400,000; in 1829, to 2,679,000; and in 1833, to 2.728,000; an increase which shows at least some external improvement. All attempts to place the financial system on a proper footing have hitherto failed; in 1837, the revenues amounted to about 13,185,000 dollars, the expenditure to 14,730,000, leaving a deficit of 1,245,000. Of this sum the support of the army (ngrosses 20, and the interest of the public debt 25, or, according to others, not less than 38 per cent. Into this dilemma the Government has been brought chiefly by its solicitude to restore the ecclesiastical and monastic system of former times in its fullest extent, and to compensate all losses sustained during the French occupation. Recourse is had to expensive loans, which scarcely alleviate the pressure for the moment; while the cause of embarrassment remains unabated, and seems likely to lead at last to the dissolution of the State. The army amounts to 18,748 men. (See GOVERNMENT, p. 568.) *Raumer's Italy*, II.

ROMA (ROME), the capital of the States, is situate on the banks of the Tiber, partly on a plain, and partly on low hills, with their intervening valleys, about 16 miles from the mouth of the Tiber, and between 50 and 60 feet above the level of the sea. The city is divided by the Tiber into two unequal parts, the larger of which, on the left or eastern bank, is Rome properly so called; the smaller portion, on the right bank, is named the Leonine city and Trastevere, and is inhabited by a rude and uncivilized population. The whole city is surrounded by ancient walls about fifteen miles in circuit; but only a part of the inclosed area is occupied by the modern city, which is mostly built upon a plain (the ancient *Campus Martius*), lying along the banks of the Tiber, to the north of the seven hills, which formed the site of ancient Rome. Four of the hills are now almost entirely deserted, or are occupied by gardens, vineyards, scattered buildings, and ruins. The streets, though generally spacious, are often winding and ill-kept. Of the numerous public buildings with which Rome is filled the 364 churches claim our first attention. Seven of these are styled *basilicæ*, or cathedrals, namely, *San Pietro in Vaticano*, *San Giovanni in Laterano*, *Santa Maria Maggiore*, *San Paolo fuori le mura*, *San Lorenzo*, *San Sebastiano*, and *Santa Maria in Trastevere*. San Pietro (St. Peter's), stands on a gentle acclivity in the Leonine city, in the north-western corner of Rome, and is built in the form of a Latin cross, the nave being 607 feet long, and the transept 444. The east front is 396 feet wide and 160 feet high; the pillars which compose it are each 88 feet in height, and 8¼ in diameter. The height of the dome, from the pavement of the church to the top of the cross which surmounts it, is 448 feet. In front of the church is a fine piazza, consisting of a double circular colonnade, with an Egyptian obelisk in the centre, and forming altogether an architectural display which is very much admired. St. Peter's occupies the site of Nero's circus, and the spot where St. Peter is supposed to have suffered martyrdom. The present church was erected instead of the more ancient one, between the years 1506 and 1780, having occupied in building two centuries and a half, under thirty-five popes, and cost from fifteen to twenty millions sterling. *San Giovanni in Laterano* (St. John Lateran), is the proper church of the Pope himself, who is its official minister, and on that account ranks above all other priests in the Catholic world; it is here also that the popes are crowned. The church, or some part of it at least, is as old as the time of Constantine the Great. It contains the famous chapel of the Corsini, reckoned the finest in the world, which is said to have cost so much as £400,000. *Santa Maria Maggiore* (St. Mary the Great), is noted for the fine colonnades and unbroken entablatures which divide the nave from the aisles, for mosaics of the fifth century and for the chapels of Sixtus V. and Paul V. *San Paolo fuori le mura* (St. Paul without the wall), is situate on the road to Ostia, south of the city, on the spot where the Apostle Paul is supposed to have been beheaded. It was a very ancient structure, but was destroyed by fire in 1824, and is now in the course of being rebuilt. It is, however, in a very unhealthy situation, and but little frequented. The only other church which deserves particular notice is *Santa Maria ad Martires*, or, *the Rotunda*, a large circular building, surmounted by a dome rising 130 feet above the pavement, and terminating with an open window in the centre, by which the church is lighted. The entrance is formed by a magnificent portico of sixteen granite Corinthian columns, each of which is 39 feet high, and its shaft of a single stone. According to an inscription on the entablature of the portico, the building seems to have been erected by Marcus Agrippa, the favourite minister of Augustus, but whether for a Pantheon (a temple of all the gods), or merely as an entrance hall to his baths, is uncertain. It is now, however, dedicated to St. Mary and all the saints, who have supplanted the deities of pagan Rome.

Next to the churches, the palaces attract the attention of the traveller. These are very numerous, and are generally very fine buildings; but sixty of them are such large and ornamental structures as might suffice for sovereign princes rather than for provincial nobles. Our space permits us to notice only those belonging to the Pope. The *Vatican*, the winter palace of the Pope, stands on the Vatican hill, close by St. Peter's, with which it forms a very inharmonious architectural composition. It is a very large heavy building, said to contain 4422 halls, chambers, or galleries, and 22 courts; but the apartments are irregularly arranged, and the whole pile is characterized by want of unity of design. It contains the Pio-Clementine and the Chiaramonti museums, both filled with the masterpieces of ancient and modern art, among which are particularly distinguished the Apollo Belvidere, the Laocoon, and the Antinous; galleries and halls painted by Raffaelle; the Sistine Chapel, which contains the Last Judgment, by Michael Angelo; the Vatican Library, contained in two galleries, as remarkable for their vast extent as for their ornaments, and embracing an immense collection of printed books, with perhaps the richest collection in Europe of rare manuscripts, and numerous pictures and other works of art. The *Quirinal*, another superb palace, on the Quirinal hill, is the Pope's summer residence; the garden attached to it is more than a mile in circuit, and is one of the finest in Italy. It is also named the palace of Monte-Cavallo, from two ancient colossal figures of horses placed there. The *Campidoglio* occupies the site of the ancient Capitol, and contains the palaces of the senator or chief magistrate, and of the conservators or municipal magistrates of Rome, a rich museum of antiquities, and an ancient equestrian statue in bronze of the Emperor Marcus Aurelius.

Rome also contains a great number of scientific and literary establishments, at the head of which may be placed *Universita Romana della Sapienza*, one of the oldest universities in Europe. Next in

importance is the *Roman College*, which may he considered as another university, to which is annexed a fine library, and collections of antiquities, natural history, models of machines, &c. The other principal seminaries are, the college *de Propaganda fide*, where natives of India, Abyssinia, Syria, Armenia, Greece, China, and other foreign countries, are instructed by professors, for the purpose of preaching the gospel to their benighted countrymen; the *Seminario Romano;* the *Collegio Nazareno;* the English, Irish, Scottish, and seventeen other national colleges for students from different countries; the deaf and dumb institution; the Ripa grande institution, where 2000 children are taught useful arts and trades; the Roman academy of St. Luke, where painting, sculpture, architecture, perspective, anatomy, history, mythology, and costumes, are taught by ten professors, &c. &c.

Besides the walls which inclose the site of ancient Rome, there are many other remains of the splendid buildings which adorned "the eternal city;" but of these we can do little more than mention the names. The largest and most imposing is the *Flavian amphitheatre*, or *Colosseum* (Coliseum), a very large oval structure formed externally of three tiers of arches and half columns of different orders, surmounted by a range of Corinthian pilasters without openings. It is said to have been capable, when entire, of containing 100,000 spectators. Half the building has been destroyed, but the remainder is considered as a very grand and imposing structure. The three triumphal arches of Titus, Severus, and Constantine; the two monumental columns of Trajan and Antoninus; the Ælian bridge, now called St. Angelo's; ten Egyptian obelisks; the pyramid of Caius Cestius; and the tomb of Cecilia Metella, are still very entire, and are among the finest specimens of the antiquities of Rome. Most of the other remains are merely fragments, as the Cloaca Maxima or great sewer, said to have been constructed in the time of the Tarquins; the circus of Caracalla; three columns of the temple of Jupiter Stator; the theatre of Marcellus, built by Augustus; the baths of Titus, Caracalla, and Diocletian; the temple of peace, and several others; and the mausoleum of Augustus; the *Moles Hadriani*, or tomb of the Emperor Adrian, consisted originally of a large building, ornamented externally with three tiers or ranges of colonnades, forming so many superb galleries, decorated with statues and sculptures, and surmounted by a golden pine apple; but all these have disappeared, and the naked body of the structure now forms the keep or central tower of the Castle of St. Angelo, where the treasures and records of the Court of Rome are preserved. It serves occasionally as a state prison, and communicates by a subterranean gallery with the Vatican palace. The magnificent palace of the Cæsars, on the Palatine hill, has entirely disappeared, its site being covered by gardens; the capitol is occupied by modern buildings, and the site of the temple of the Capitoline Jupiter is said to be now covered by the church of *Santa Maria in Ara Cœli*. Of all the stupendous aqueducts of ancient Rome, the ruins of the Martian and the Claudian only remain, the former of which conveyed the water thirty-five, the latter, sixty miles. Rome, however, is still most abundantly supplied with water, brought into it by several Popes, and distributed by means of fountains, in every part of the city, some of which are very ornamental structures.

In 1800, the population of Rome amounted to 153,000; in 1813, it had fallen to 117,882; but, by 1836, it had again increased to 157,368, of whom 3700 were Jews, 201 Turks and heretics, 37 bishops, 1468 priests, 2023 monks, 1476 nuns, 541 seminarists and collegians; 112,940 church communicants, 40,738 non-communicants; males 81,488, females 72,190. It is the boast of the Romans that in no other city is so large a sum devoted to public charity in proportion to the population; but of the great number of benevolent establishments and institutions, many are of doubtful, and even pernicious tendency; and in spite of the liberality with which the charity is distributed, nowhere is there more mendicity, want, and misery. Besides numerous foundling hospitals, there are thirteen societies for giving doweries to young women on their marriage, and gifts on becoming nuns; and, of 1400 women annually married, 1000 receive dowries from the public purse. There are twenty-two establishments for the diseased, the insane, and the convalescent, which, as a whole, can accommodate 4000 patients. Rome is one of the greatest receptacles for abandoned children, which are brought from distant provinces, and even from Naples. Above 2800 children are annually received by the seven foundling hospitals. The Protestant inhabitants of Rome are now allowed to have a chapel for worship, and to bury their dead in a piece of open ground beside the Pyramid of Caius Cestius. The Campagna di Roma, or country around Rome, is now for many miles completely desolate, and a prey to malaria, which sometimes even pervades the seven hills and penetrates into the streets of the city.

Tivoli (anc. *Tibur*), on the Teverone (Anio), is a small episcopal city, with 6000 inhabitants, 18 miles E. by N. of Rome, in a delightful situation, with several remarkable antiquities, as the remains of the round temple of Vesta or of the Sibyl, the Villa of Mæcenas, and the Villa of the Emperor Adrian. The Teverone formed a picturesque cascade at Tivoli; but this has recently been destroyed by diverting the river into a new channel. *Albano*, a small episcopal city, with 4200 inhabitants, is agreeably situate near the western side of the lake to which it gives its name, 14 miles S.S.E. of Rome. On the banks of the lake is *Castel Gandolfo*, where is a fine summer palace belonging to the Pope; and on the east side of the lake, on a long narrow ridge, are the remains of *Alba Longa*, the parent and early rival of Rome. *Frascati*, the ancient *Tusculum*, a small episcopal city, with 4000 inhabitants, 12 miles E.S.E. of Rome, occupies a fine situation on the side of a hill, and contains several remains of antiquity, particularly those of Cicero's villa. *Subiaco*, a small town of 2000 inhabitants, near the Teverone, with a castle belonging to the Pope, the remains of a palace of Nero, and the rich convent of St. Benedict. *Palestrina*, the ancient *Præneste*, 24 miles east of Rome, with 3500 inhabitants. From its lofty citadel, now called Castello di San Pietro, which Hannibal and Pyrrhus are said to have ascended for the purpose of viewing Rome, the prospect over the plain of Rome, and the valley of the Hernici, towards Anagni, is splendid. *Paliano*, a fortified town beyond Palestrina, with 3000 inhabitants. *Ostia*, at the mouth of the southern branch of the Tiber, 16 miles from Rome, formerly the flourishing port of that city, is now almost entirely abandoned on account of malaria; "and of all the wretched places on the coast in the vicinity of Rome, Ostia, in its present state, is one of the most melancholy." At the mouth of the other branch of the river is *Fiumicino*, adjoining the remains of the port and docks constructed by the Emperors Claudius and Trajan. It contains a tower, surmounted by a lighthouse.—(*Gell's Top.* II. 134.) About 10 miles N.W. of Rome is the site of the ancient Veii, the remains of which are now almost completely obliterated.

Velletri, an irregularly built episcopal city, with 10,000 inhabitants, 23 miles S.E. of Rome, is finely situate on a height, from which there is an extensive view. *Norma (Norba)*, 13 miles from Velletri, a small town, contains the remains of ancient Cyclopean walls, with five gates and two towers. *Terracina* (anc. *Anxur*), a seaport town, with 4000 inhabitants, on the Gulf of Gaeta, 60 miles S.E. of Rome, and on the east side of the Pontine marshes. *Frosinone*, 45 miles E.S.E. of Rome, is built on the top of a lofty hill, whose base is washed by the river Cosa, on the site of the ancient *Frusino*, a large and powerful Latin city. At the distance of 10 miles is *Alatri*, on the slope of a hill crowned by the citadel, whose walls, as well as those of the town itself, are of the most gigantic dimensions, evidently the work of the Pelasgi. *Benevento*, 130 miles E.S.E. of Rome, and 32 N.E. of Naples, an archiepiscopal city, with 18,000 inhabitants, occupes a fine situation, but its streets are narrow and dirty; and its public buildings neither grand nor elegant. It contains, however, a beautiful triumphal arch, erected A.D. 113, in honour of the Emperor Trajan, and still in good preservation; and other Roman

remains. The province of Benevento is entirely separated from the rest of the Roman States, and, during the French ascendancy, was formed into a principality in favour of the celebrated Talleyrand; and also *Ponte Corvo*, another separate territory, belonging to the Pope, in favour of Marshal Bernadotte, now King of Sweden.

Civita Vecchia, a small episcopal seaport town, with 7000 inhabitants, is a free port, has a naval arsenal, and considerable trade; 40 miles N.W. of Rome. *Corneto*, 10 miles N. of Civita Vecchia, is noted for the great number of Etruscan antiquities found in its neighbourhood. Similar antiquities have also been found at *Piano di Voce* (or *Vulce*), *Ponte Bodio*, *Montalto*, *Canino*, and at *Civita Turchina*, one league north of Corneto, the site of the ancient Tarquinii. *Tolfa*, noted for its rich alum mine, on the range of the woody mountains of Cervetere, which were anciently called the Lucus Silvani. Tolfa contains a great manufactory of saltpetre. At *Cervetere*, the ancient *Cære*, a sepulchral building has lately been discovered under ground, which is considered to be a very ancient specimen of architecture.

Viterbo is a neatly-built episcopal city, with 13,000 inhabitants, at the foot of a hill surrounded with gardens, vineyards, and country houses, 42 miles N.W. of Rome. *Orvieto*, also an episcopal city, 63 miles N.W. of Rome, noted for its fine gothic cathedral, and its excellent wine. Population 8000. *Aquapendente*, a small ill-built town, with a cathedral, five churches, and 2400 inhabitants, 15 miles W. of Orvieto. *Ronciglione* is a flourishing town, with 3357 inhabitants, between Monte Rosi and Viterbo, and the fourth post from Rome on the road to Florence. *Civita Castellana*, 35 miles N. of Rome, a small town in a strong and beautiful situation, is supposed to occupy the site of the ancient *Falerii*. Between Civita Castellana and Nepi is a famous grotto, cut in the rock, during a period of fifteen years, by the hermit Giovanni Andrea Rodio, who died in 1819. *Rieti* (anc. *Reate*), a town of very great antiquity, 43 miles N.N.E. of Rome, is a bishop's see, and is noted for the fertility of its neighbourhood, the industry of its inhabitants, and its remains of antiquity. Population 12,000. *Spoleto*, a large but thinly-peopled episcopal city, with 7000 inhabitants, 65 miles N. by E. of Rome, is particularly noted for the remains of its ancient magnificence. *Narni* and *Terni*, are two towns on the Nar; the former a place of great antiquity, and noted for a fine Roman bridge, called the Sanguinazio; and the latter celebrated for a waterfall, called the *Cascade delle Marmore*, formed by the river Velino, where it joins the Nar, after draining the valley of Rieti. *Pie di Luco*, on a lake of the same name near Spoleto, is noted for one of the finest echoes known, which repeats distinctly eleven syllables. *Bolsena*, an unimportant village, on the lake to which it gives its name, represents the ancient *Vulsinii*. *Montefiascone*, S.E. of the lake, produces wine so excellent that a German prelate died there from drinking it to excess.

Perugia, 90 miles N. of Rome, an episcopal city, built on a hill not far from the right bank of the Tiber, in a fertile and well-cultivated country, possesses some fine remains of antiquity, a university, an antiquarian museum, a library, several fine churches, a good theatre, some silk manufactures, and 30,000 inhabitants. *Foligno*, 22 miles S.E. of Perugia, is a commercial town, with manufactures of wax candles, cloth, paper, and comfits, a museum of antiques, and 9000 inhabitants. *Assisi*, 85 miles N. of Rome, an episcopal city, with 4000 inhabitants, occupying a conspicuous situation on a hill, is the birth-place of San Francisco, the founder of the order of Franciscan monks, and contains his tomb, which still attracts great crowds of pilgrims; and also a double church (upper and lower), built in the 13th century in honour of the saint, and ornamented with pictures, of the earliest modern artists, in a good state of preservation. The celebrated church of *Santa Maria degli Angeli*, near Assisi, has been destroyed by an earthquake. *Gubbio*, 17 miles N. by E. of Perugia, with an industrious population of 4000, is noted for its antiquities, among which are the Eugubian tables, an Etruscan relic, discovered in 1456 in the ruins of the temple of Jupiter Apenninus, which have puzzled antiquaries to decipher their contents. *Camerino*, 32 miles east of Perugia, is an episcopal city, with a secondary university, and 7000 inhabitants. *Fabriano*, an episcopal city, with 7000 inhabitants, and manufactures of paper and parchment. *Fermo*, is an archiepiscopal city, with a secondary university, and several fine buildings, among which are the cathedral and the theatre, 107 miles N.E. of Rome. Population 7000. *Macerata*, a large town of 12,000 inhabitants, with a university and other literary establishments, 15 miles N.W. of Fermo. At *Tolentino*, 10 miles S.W. of Macerata, a peace was concluded between Buonaparte and the Pope in 1797. *Ascoli*, is a well-built handsome town, with a cathedral, numerous other churches, and 12,000 inhabitants, 15 miles from the Adriatic, and 90 N.E. of Rome. *Loreto*, a considerable town, with 8000 inhabitants, stands on the coast of the Adriatic, 124 miles N.N.E. of Rome. Its celebrated church of Our Lady is superstitiously believed to contain the *Santa casa*, or house in which the Virgin Mary dwelt at Nazareth, and which was transported by angels to this place. It attracts, of course, great crowds of pilgrims, and once contained a large and valuable treasury, the greater part of which has been converted by its guardians to other than pious uses.

Ancona, an episcopal city, built in the form of an amphitheatre, on the slopes of two hills which rise from the shore of the Adriatic, 132 miles N.N.E. of Rome, is a busy commercial town, with a citadel, a fine quay, and a harbour formed by a pier 2000 feet in length, 100 in breadth, and 65 above the water, and having at its extremity a lighthouse with a revolving light.—Population 24,000, many of whom are Jews, Greeks, and Moslems. Its manufactures consist principally of wax, tallow, silk hats, and paper. The harbour is well adapted for building and repairing ships, and being a free port, is frequented by traders of all nations. *Sinigaglia*, a seaport town on the coast of the Adriatic, N.W. of Ancona, with 8000 inhabitants, has an annual fair in July, which is the best frequented in Italy, and one of the first in Europe. *Urbino*, 45 miles W. by N. of Ancona, once the capital of a duchy, and now an episcopal city, is noted as the birth-place of Raffaelle and Bramante, some of whose works embellish its cathedral and the church of the Capuchins. *Pesaro*, a seaport town near the mouth of the Foglia, with a cathedral, a theatre, and a good harbour. *Fano*, an episcopal seaport town, stands near the mouth of the Metaro (Metaurus.)

Rimini, a large but thinly-inhabited episcopal city, near the mouth of the Marecchia, which forms a harbour adapted only for fishing boats. The city contains some good streets, places adorned with fountains, a number of well-built houses and churches, a public library, and several important remains of antiquity, with 15,000 inhabitants. *San Marino*, 12 miles S.W. of Rimini, a small town on a lofty hill, is the capital of a sovereign republic, whose territory contains three castles, five churches, and about 5000 inhabitants.

Ravenna, an archiepiscopal city, between the Montone and the Ronco, 175 miles N. of Rome, adjoins some large marshes, which render the air unwholesome. It is a place of great historical celebrity, but is now very much decayed, and contains only about 16,000 inhabitants. *Forli*, a busy manufacturing town with 16,000 inhabitants, 18 miles S.W. of Ravenna. *Cesena*, is also a busy town, with 12,000 inhabitants, 20 miles S. of Ravenna. *Cervia*, in the same district, contains 4000 inhabitants, with immense salines. *Faenza*, a large and well-built episcopal city, 19 miles S.W. of Ravenna, has considerable trade and manufactures, with 14,000 inhabitants. Faenza has given its name (*faience*) to the pottery, called *majolica* by the Italians, the manufacture of which is still considerable. *Imola*, an episcopal city, with 8000 inhabitants.

Bologna, a large archiepiscopal city, with an industrious commercial population, is situate on a canal, between the Reno and the Savena, in the midst of a fine country covered with elegant houses and villages. It is a well-built town, adorned with a number of fine buildings, and has always been

distinguished for its important literary and scientific institutions; the principal of which are, the university, one of the most ancient in Europe; the botanic garden; the institute, a magnificent establishment with rich collections of books, and objects of chemical, anatomical, and physical science, and antiquities; a fine observatory; an academy of the fine arts; galleries of sculpture and painting, &c. — Population 71,000.

Ferrara, a large and fortified archiepiscopal city, on a branch of the Po, and a canal which connects that river with the Maestro. It contains a university, a public library, a large, strong, and regular citadel, and 24,000 inhabitants. The city occupies an unwholesome situation, in a flat marshy country, 30 feet lower than the surface level of the Po, which is prevented by dykes from overflowing it. *Ponte di Lago Scuro*, a small town on the Po, with a great transit trade and 5000 inhabitants.

§ 7. *The Kingdom of Naples, or The Kingdom of the Two Sicilies.*

This kingdom consists of two distinct portions; the continental, styled *Al di qua del Faro*, or, On this side of the strait; and the insular, consisting of the Island of Sicily, or, The other side of the strait. The former occupies the southern portion of the peninsula of Italy, from the parallel of 43° N. and the meridian 13° E. to the Strait of Messina, extending in length 380 miles, but varying very much in breadth, and comprising an area of 36,500 square English miles. The kingdom is divided into fifteen intendancies, as stated in the following table:—

Intendancies.	*Cities and Towns, &c.*
Napoli, ...	Napoli (Naples), Puzzuoli, Somma, Ottajano, Casoria, Portici, Resina, Torre del Greco, Torre del Annunziata, Castelamare, Sorrento; the ruins of Herculaneum and Pompeii; the islands of Procida, Ischia, Capri.
Terra di Lavoro,	*Caserta*, Piedimonte, San Germano, Monte Cassino, Sora, Arpino, Atina, Gacta, Capua, Santa Maria, Nola, Acerra, Aversa, Maddaloni; the Pontian Islands.
Principato Citra,	*Salerno*, Campagna, Sala, Vallo, Amalfi, Nocera, Cava; the ruins of Pæstum or Posidonia.
Principato Ultra,	*Avellino*, San Angelli de Lombardi, Ariano, Monte Vergine, Atripalda, Montella, Solofra.
Molise, ...	*Campobasso*, Isernia, Larino, Termoli, Agnone.
Abruzzo Ultra I.,	*Teramo*, Campli, Penne, Civitella del Tronto, Senarica.
Abruzzo Ultra II.,	*Aquila*, Avezzano, Capistrello, Angizia, Civita Ducale, Pescina, Sulmona.
Abruzzo Citra, .	*Chieti*, Lanciano, Ortona a mare, Pescara, Vasto, San Vito.
Capitanata, . .	*Foggia*, Ascoli, Bovino, Lucera, Manfredonia, Monte San Angelo, San Severo. The isles of Trimiti, &c.
Terra di Bari, .	*Bari*, Andrea, Terlizzi, Bitonto, Altamura, Gravina, Barletta, Trani, Bisceglia, Molfetta, Giovenazzo, Monopoli.
Terra d'Otranto,	*Lecce*, Sta Maria di Leuca, Alessano, Otranto, Brindisi, Francavilla, Taranto, Manduria, Gallipoli, Nardo, Galatina.
Basilicata, . . .	*Potenza*, Lagnero, Tursi, Matera, Montepeloso, Melfi, Oppido, Muro.
Calabria Citra, .	*Cosenza*, Bisignano, Cassano, Castrovillari, Corigliano, Rossano, Scigliano, Paola or Paula, Longobuco.
Calabria Ultra I.,	*Reggio*, Scilla, Seminara, Palmi, Gerace, Bova.
Calabria Ultra II.,	*Catanzaro*, Sta Severina, Cotrone, Nicastro, Pizzo, Monte Leone, Parghelia, Tropea, Nicotera, Stilo, Serra.

These provinces are subdivided into districts, circles, and communes. Of the whole surface of the kingdom about 14,100 square miles are under tillage or cultivated as orchards. Since the separation of the country from Spain, the population has been gradually increasing; it amounted, in 1781, to 4,709,000; and in 1835, to 5,946,000. During the French domination the military institutions corresponded essentially with those of France; and these have been in many respects retained. The peace establishment amounts to about 37,000 men; every man is liable to the conscription from the completion of his eighteenth to the completion of his twenty-fifth year; the period of service for the infantry extends to six years, and for the cavalry, to eight. The financial system is in a very unsatisfactory state; for the amount of the total revenue, Raumer says (*Italy and the Italians* in 1839, vol. ii.) he finds abundance of figures, but nobody to vouch for their accuracy, as the truth is either purposely concealed, or alterations made in the system of management render it impossible to reconcile the various items with the sums. Upon the whole the revenue and the expenditure have kept progressively increasing, though the latter has too often exceeded the former. The revenues are said to have amounted, in 1832, to 27,442,000 ducats, (£4,545,023 sterling.) The estimated revenue for 1838-9 amounted to 26,670,000 ducats; of which 14,236,000, or more than a half, were set apart for the financial management, the royal household, and the public debt; for the council of ministers, 44,000; ministry of foreign affairs, 251,000; ministry of justice, 727,000; ministry of religion, 40,000; ministry of the interior, 1,846,000; army, 7,200,000; navy, 1,330,000; and police, 200,000.

The productions of the kingdom are of the most various descriptions, and might be made very valuable. Corn, wine, oil, flax, hemp, oranges, and other fruits, and all kinds of vegetables might be raised in quantities equal at least to twice the consumption of the inhabitants. Rock-salt, coal, and other minerals abound, but scarcely any attempt has been made to work them. In many parts of the interior timber for ship-building is to be found, but the expense of conveying it to shipping ports would more than equal the expense of importing it from other countries. Agriculture and industry of every sort are in the rudest state. Farming implements, carts, ploughs, and tools of every kind, are of the most wretched description. A miserable cotton manufactory, a sort of Government monopoly established at Salerno, glove and hat manufactories at Naples, with coarse linens and cloths, comprise nearly all the branches of manufacturing industry. For some time past the government has extended support, especially to the shipping of Naples, in the fictitious shape of premiums, thus taxing the community for the benefit of a few traders. Premiums have also been held out for the establishment of manufactures, while roads, and other facilities to the promotion of agriculture and the productions of the soil generally, have been entirely neglected since the time of Murat, with the solitary exception of a railway, which has been constructed from Naples to Portici. The neighbouring seas abound with fish, the forests contain game, and the marshes and shores are frequented by wild fowl. No means have been used to drain the marshy grounds for the purpose of preventing malaria; and all the harbours, even that of Naples, are in the most neglected condition. In short, no country in Europe possesses greater natural advantages; and in none has so little been done to develope the abundant resources and riches of the kingdom. The tariff has been ruinous to the Customs; two-thirds of the sugar consumed in the country are smuggled, chiefly from the Adriatic. A trade which would create an extensive demand for the produce of the kingdom; a less expensive and less rigorous system of raising the land taxes and octrois; a diminution in the rate of taxation, especially in agriculture; liberal commercial regulations with a moderate tariff; and perfect security of person and property, are the changes necessary to render the kingdom of the two Sicilies productive

and flourishing. At present it is one of the poorest, worst governed, and least flourishing of the European communities. Taking into account the productive character of the soil, it has been estimated that the two portions of the kingdom are capable of yielding abundant food for at least twenty millions of inhabitants, or three times the present amount. (*Report on the Commercial Relations of the Kingdom of the Two Sicilies, by J. Macgregor; presented to Parliament, August* 1840; *page* 50.)

Cities and Towns.

Intendancy of Naples. NAPOLI (NAPLES), the capital of the kingdom, and one of the largest cities in Europe, is situate on the northern shore of a beautiful bay, opening to the west, in N. lat. 40° 50′, and E. long. 14° 22′; about 120 miles S.E. of Rome. Nothing can be more beautiful than Naples when viewed from the bay, rising as it does from the sea on an amphitheatric slope, crowned with the sombre castle of San Elmo. The city is 9 miles in circumference, and contains about 350,000 inhabitants; but though the buildings are lofty and solid, and some of the streets wide and straight, yet, relatively to its extent and importance, it contains few edifices which can be compared with those of the other great cities of Italy. Its churches, overloaded in the interior with gilding, pictures, and other ornaments, are little remarkable for their dimensions or architecture; and nearly the same may be said of the palaces and other public edifices. The *Royal palace*, the King's ordinary residence, is, however, remarkable for its vast extent, the architecture of its front, its magnificent stair, and the beauty and richness of its rooms. There is another royal palace on the *Capo di Monte*, overlooking the city; and a third named *di Chiatamone*, remarkable for its delightful situation and its hanging garden. The other principal buildings worthy of notice are: The large edifice of the *Studii Publici* or *University*; the *Royal Museo Borbonico*, now enriched with antiquities, and a collection of paintings, in a building originally erected for the Studii, which were transferred to the Convent of Gesu Vecchio, in 1790; the *Reclusorio*, or poor's house; the hospital for incurables, and that of the Annunziata, to which is annexed a well-endowed foundling hospital; the arsenal; the archbishop's palace; the theatre of St. Ferdinand, the finest, in respect of its architecture, of the ten which the city possesses; the Vicario or Castel Capuano, an old royal palace, now occupied by the courts of justice; the Theatre of San Carlo, one of the largest and finest in the world; and the palace of the Royal Ministers, or of the Finances, finished in 1826, and remarkable for its architecture and great size. Among the numerous churches, the only one worthy of particular notice is the new cathedral or church of San Gennaro (Januarius), the patron saint of Naples, whose head, and two small vessels filled with his blood, are preserved in a chapel called El Tesoro. The blood of the saint is publicly exhibited three times a-year, in May, September, and December, on which occasions it melts in its vase; if the fusion take place quickly, the joy of the people is great; but if there be any unexpected delay, their tears, prayers, and cries, are excessive; as the absence of the miracle is supposed to announce some dreadful impending calamity. The principal scientific and literary establishments are: The University; the lyceum del Salvatore; the school of paleography, attached to the general archives of the kingdom; the school of painting and sculpture; the establishment for unrolling and decyphering the MSS. found at Herculanum; the military college; the military school; the marine academy; the veterinary school; the two great schools for girls, Miracoli and San Marcellino; the two colleges for music, that for males at San Pietro a Majolla, and that for girls at the Concordia; the royal poor's house, where 6000 children are taught arts and trades, at the cost of £20,000 a-year to the Government; the chairs of clinical surgery, midwifery, opthalmologie, and surgery attached to the public hospitals; the botanic garden; two observatories; the topographical board; four public libraries, among which is the Borbonica, one of the richest in Europe; the cabinets of mineralogy, natural history, physics, and chemistry; the royal museum of antiquities; the Borbonic academy, divided into the three branches of antiquities, sciences, and fine arts, to the support of which the King assigns an annual revenue of £2400; the institute of encouragement; and the societies Pontaniana and Sebezia. The fortifications of the city are of little military importance; they consist of five forts or castles, the principal of which are, that of San Elmo, on a hill behind the city, which it completely commands, the Castello del'Ovo (egg or oval castle), built on a rock in the sea, and the Castello Nuovo (new castle), which contains a triumphal arch and several other curious objects. The harbour is artificial, being formed by a great mole, which is continually crowded with people, and contains a light-house and a fine well. In a hill, in the northern part of the city, are the catacombs, which served as burial places in the early ages of the church, and which are said to be more extensive than those of Rome and Syracuse. At the south-west corner of the city is the tufa hill of Posilipo, through which the public road is carried by a gallery or tunnel, a mile in length; and at the east end of the gallery is Virgil's tomb.

Puzzuoli, a small episcopal city, with 8000 inhabitants, stands on the coast, 6 miles W. of Naples, in a delightful situation, where were many villas of the ancient Romans. It contains the remains of an amphitheatre called the Colosseo, nearly as large as that of Rome, the ruins of a temple of the nymphs, and one of Serapis, which has given rise to some interesting speculations among geologists. In the neighbourhood are several remarkable curiosities; the Lucrine Lake, the Lake of Avernus, the Lake of Fusaro noted for its excellent oysters, the Dog's Grotto, the Lake of Agnano, the Solfatara, and the Monte Nuovo.—(*See anté, page* 563.) On the west side of the bay, opposite to Puzzuoli, is *Baia*, a miserable place, almost deserted, but with a safe road and harbour, and remarkable in ancient times as the summer retreat of the Roman nobles, of whose villas, temples, and tombs it contains numerous remains. To the north of Baia are the ruins of the ancient city of Cumæ, and the Sibyl's Grotto, a tunnel which penetrates to a great depth, but is now almost choked up with rubbish; and to the south the promontory and harbour of *Miseno*, which was the station of the Roman fleet for the protection of the western part of the Mediterranean. *Portici*, 4 miles S.E. of Naples, at the foot of Vesuvius, is a small town with a royal palace and 5000 inhabitants. Almost contiguous to Portici is *Resina*, a large village with 9000 inhabitants, on the site of *Herculaneum*, a Roman town which was buried under a thick bed of gravel, at the terrible eruption of Vesuvius in A. D. 79, and first discovered in 1713. *Torre del Annunziata*, a town with 9000 inhabitants, on the coast, 12 miles S.E. of Naples, at the southern base of Vesuvio, is noted for its great manufacture of military arms, and for its vicinity to *Pompeii*, an ancient city which was buried, like Herculaneum, in the year 79, and discovered in 1755. A considerable part of the ancient town has been cleared, exhibiting the remains of a forum, and of several fine temples and theatres, besides private houses, baths, and streets, which give a perfect idea of a Roman city. There are several other towns round the base of Vesuvius, as *Torre del Greco*, on the sea shore, with 13,000 inhabitants; *Somma*, with 7000; *Ottajano*, with 15,000; *Santa Anastasia*, with 6000. The neighbourhood of these towns produces the famous wine known by the name of *Lacrima Christi* (Christ's tears.) *Castelamare*, *Vico*, and *Sorrento*, three towns on the south-east coast of the bay, opposite Naples. Castelamare is an episcopal city, with 15,000 inhabitants, built in a delightful situation, above the ruins of the ancient buried city of *Stabiæ*, from which several manuscripts, statues, and paintings have been dug. Near it is *Quisisana*, a small town, with a fine summer palace of the king, and the principal building yard for the royal navy. Sorrento is a small archiepiscopal city with 5000 inhabitants, in a fine situation, noted for its excellent silk, and for its antiquities.

Terra di Lavoro.—CASERTA, 13 miles N. by E. of Naples, a small town with 5000 inhabitants, oc-

cupies a fine situation, and has a magnificent royal palace, and an aqueduct across the valley of Maddaloni, composed of three ranges of arches. The water course, of which it forms a part, is 27 miles long, and is carried through Mont Garzano by a remarkable tunnel, more than 3000 feet long. Here is also the *Colony of San Leucio*, founded by King Ferdinand IV., which exhibits, on a small scale, a model of all that is necessary for the education of the people. *Piedmonte*, noted for its industry and its great works, where the cotton of the kingdom is manufactured.—Population 5000. *San Germano*, a small town, with 5000 inhabitants, near which is the celebrated monastery of *Monte Cassino*, considered as the oldest in Europe, containing a fine church, and adorned with precious marbles and superb paintings, and a library rich in valuable documents. *Arpino*, the birthplace of Cicero, Marius, and Agrippa, is a small town with 8000 inhabitants, who are engaged in the manufacture of cloth and parchment, and carry on a brisk trade. It still contains the remains of the ancient town with its Cyclopian walls, and a large paper-work, which employs 200 people. *Atina*, a small town with Cyclopean remains. *Gaeta*, a strongly fortified episcopal city, with a harbour, one of the safest and best in Italy, and several remains of antiquity; the inhabitants amount to 14,000, besides the garrison. *Capua*, a fortified archiepiscopal city, with a citadel considered one of the keys of the kingdom, on the Volturno, 18 miles N. of Naples. In its vicinity are the remains of the ancient capital of Campania, among which there is an amphitheatre. *Santa Maria*, a large market town, with 9000 inhabitants, and a large prison, is the seat of the provincial tribunal. *Nola*, an episcopal city, with 9000 inhabitants, near the famous Phlegræan plains, is celebrated for its ancient remains, and particularly for the tombs, in which have been found great numbers of vases, and other curious objects. It was here that the Emperor Augustus died; and it is said that bells were first used here, about the end of the fourth century, by one of its bishops, to summon his people to worship. *Aversa*, an episcopal city, of 16,000 inhabitants, with a large foundling hospital and a house for idiots. *Maddaloni*, a fine town, with a royal college, and a great market held twice a-week, for the supply of provisions to the capital.

Principato Citra.—SALERNO, an archiepiscopal and commercial city, with 11,000 inhabitants, is situate on the gulf to which it gives its name; it is noted for its ancient school of medicine, and contains a lyceum, and the palace of the Intendant, one of the finest of the provincial government residences in the kingdom. *Amalfi*, a small archiepiscopal city, on the rocky coast west of Salerno, with about 3000 inhabitants, acted a distinguished part in the middle ages, by its numerous commercial navy, with which its citizens traded to all parts of the then known world. It was here that a copy of the Pandects was discovered in the 12th century, that the mariner's compass was invented, or at least perfected, and that the order of the Knights of St. John of Rhodes and Malta originated. *Nocera*, an episcopal city, with 7000 inhabitants, and a fine church of Santa Maria Maggiore, resembling the Pantheon at Rome, and one of the oldest in Italy. *Cava*, an episcopal city, with an industrious population, and a celebrated abbey, which possesses a fine library particularly rich in Lombard manuscripts. On the coast, 23 miles S. by E. of Salerno, are the celebrated ruins of *Pæstum*, or *Posidonia*, in the midst of a pestilential desert, where, after having been long forgotten, they were discovered in 1755. The principal remains are portions of the city walls, an amphitheatre, the northern gate of the city, and three temples of colossal dimensions, still very entire, and of the most admired architecture.

Principato Ultra.—AVELLINO, an episcopal city, with an industrious population of 13,000, and a royal college. *Monte Vergine*, a celebrated abbey and sanctuary, with valuable archives. *Solofra*, a small town of 6000 inhabitants, with numerous tanneries and other works.

Molise.—CAMPO BASSO is a small town with 8000 inhabitants, a royal college, and numerous manufactures, among which the cutlery is particularly noted. The fine road which passes through it, forming the communication between Naples and the Adriatic coast, has rendered it the first commercial place in the kingdom. *Agnone*, a town of 7000 inhabitants, with copper manufactures, which are considered the best in the kingdom. *Isernia*, a small episcopal city, with numerous remains of antiquity.

Abruzzo Ultra I.—TERAMO, an episcopal city, has 9000 inhabitants, and a royal college. *Giulia Nuova*, a very small town, with an important custom-house. *Civitella del Tronto*, a fortified town.

Abruzzo Ultra II.—AQUILA, a fortified episcopal city, on a hill near the Aterno, with a lyceum, and 8000 inhabitants, is one of the best built and most commercial places in the kingdom. *Avezzano*, a town with 6000 inhabitants, near the outlet of the Lake of Celano. *Sulmona*, an episcopal city, with 8000 inhabitants, is noted for comfits, and as the birth-place of the poet Ovid.

Abruzzo Citra.—CHIETI, a fine archiepiscopal city on the Pescara, contains a royal college, a society of agriculture, arts, and trade, and about 13,000 inhabitants. *Lanciano*, an archiepiscopal city, with 9000 inhabitants, is considered as the most commercial place in the Abruzzi.

Capitanata.—FOGGIA, a well-built commercial town, in an unhealthy situation, on the Cervara, contains a tribunal of commerce, a school of rural economy, and a fine custom-house. Population of town and district about 21,000. *Manfredonia*, an archiepiscopal city, is situate on a gulph of the Adriatic, with 5000 inhabitants. *Lucera*, an episcopal city, with a royal college, a civil and criminal tribunal, and about 8000 inhabitants. *Canosa*, a very ancient town, with 4000 inhabitants, not far from the Ofanto, possesses the remains of an aqueduct, an amphitheatre, and a triumphal arch. In the vicinity is the field of *Cannæ*, where Hannibal gained a signal victory over the Romans.

Terra di Bari.—BARI, a fortified archiepiscopal and commercial city, with a harbour on the Adriatic, a lyceum, several manufactures, a fine theatre, and 19,000 inhabitants. *Trani*, a fine archiepiscopal city, on the Adriatic, with a harbour, and 14,000 inhabitants. The tower of its cathedral is one of the highest in Italy. *Barletta*, a fine town, is agreeably situate on the shore of the Adriatic, with a harbour, and 18,000 inhabitants. It has a fine cathedral, and other remarkable buildings; the rich salines in its vicinity, and its flourishing trade, render it a place of considerable importance. *Molfetta*, an episcopal city, with 11,000 inhabitants, has linen manufactures, and considerable trade. *Altamura* is noted for remains of antiquity, and its fairs, with about 16,000 inhabitants. *Monopoli*, an episcopal city, is noted for the industry of its inhabitants, for the subterranean habitations found in the vicinity, which are supposed to have been formed in very remote antiquity. At the distance of a few miles are the ruins of the ancient *Egnatia*. *Giovenazzo* is a small town, with 6000 inhabitants, and a large foundling hospital.

Terra d' Otranto.—LECCE, the capital, is a well-built, commercial, episcopal city, with fortifications, and about 14,000 inhabitants. *Taranto*, a fortified archiepiscopal city, with extensive salines, a harbour nearly filled up, and about 14,000 inhabitants. *Brindisi*, a small archiepiscopal city, with a harbour, considerable trade, and 6000 inhabitants, is a place of great celebrity in Roman history. *Gallipoli*, a small episcopal city, with important fortifications, a harbour, and some trade. Population 8000. *Galatina*, a small trading town, in a delightful situation.

Basilicata.—POTENZA, is an episcopal city, with a civil and criminal tribunal, a royal college, and 9000 inhabitants. *Matera*, an archiepiscopal city, with a college, and about 11,000 inhabitants.

Calabria Citra.—COSENZA, a busy and commercial archiepiscopal city, with a civil and criminal tribunal, a royal college, a fine cathedral, and several other remarkable buildings. Population 8000. *Castrovillari*, a small town, with numerous plantations of cotton, mulberries, and fruit; in the

vicinity, near Mont Pollino, is made the famous cheese called caccio-cavallo. Population nearly 5000. *Longobuco*, a small town, in the vicinity of which are iron mines.

Calabria Ultra.—REGGIO, an archiepiscopal city, on the Strait of Messina, is the capital of Calabria Ultra I., with a civil and criminal tribunal, a royal college, and a considerable public library. It is considered the wealthiest provincial city of the continental part of the kingdom, for which it is indebted to the commercial activity of its citizens. Population 17,000. *Gerace*, a small episcopal city, with 3000 inhabitants; in the vicinity of which are thermal springs, and the ruins of the ancient *Locri*. *Scilla*, a small place representing the ancient Scylla, so noted for its danger to those sailing through the Strait of Messina. CATANZARO, the capital of Calabria Ultra II., an episcopal city occupying a height between the mountains and the Ionian Sea, has a civil and criminal tribunal, a lyæum, a harbour, and 11,000 inhabitants. *Monte Leone*, an episcopal city, with a royal college, and about 7000 inhabitants. *Potrone*, a very ancient episcopal city, with considerable trade, and a harbour on the Ionian Sea. *Stilo*, a small place, with iron mines.

§ 8. *The Island of Sicily.*

This lovely island is situate in the Mediterranean Sea, adjoining the south-western extremity of Italy, from which it is separated by the narrow Strait of Messina. Its greatest length is about 190 miles, and its greatest breadth about 106, the superficial area being 8067 square English miles, and the population about 1,800,000. The island is studded with mountains; the principal range of which extends in the direction of east and west, nearly parallel to the north coast from the Strait of Messina to the western point, with a branch which starts off near the middle of the island, and stretches to the south-east, terminating at Cape Passaro. Among these mountains, and sometimes on their very tops, are plains of moderate extent, some of which are nearly 1000 feet above the level of the sea. The predominating rocks are the tertiary, secondary, and volcanic; the older formations being less abundant. Primitive rocks occur near Messina, where the prevailing species appears to be gneiss. The transition rocks constitute a chain of hills which extends obliquely from Melazzo on the north coast to Taormina on the east. A large sandstone deposit occupies a great part of the central chain, extending along part of the north coast; and resting upon it is a formation of dolomite and limestone, which compose the north-western portion of the island. Above these are marls and limestone, which are again overlaid by a conglomerate containing shells of species still existing in the Mediterranean, with a superincumbent deposit of bone breccia. Above these is a diluvial deposit, of which there are two kinds, the oldest occupying considerable heights, the newer covering the bottoms of the valleys. The tertiary rocks, so abundant in the island, contain beds of common salt, sulphur, gypsum, alum, and beautifully crystallized sulphate of strontites. On the eastern coast, from a base of eighty miles in circumference, rises the gigantic volcanic cone of *Mongibello (Ætna)*, to the height of 10,870 feet, of which a splendid section is displayed on the east side, in the *Val di Bove*, which penetrates far into the body of the mountain, and exposes the strata of which it is composed. Etna has been an active volcano since the dawn of history; and its huge mass seems to be entirely composed of volcanic matter. Its base exhibits all the fruit trees peculiar to the transition zone, rich corn fields intermixed with vineyards and olive groves and orange trees, producing altogether a variety of foliage, such, perhaps, as cannot be seen in any other part of Europe. Higher up is the forest region, containing the oak, the beech, the ash, horse chestnuts in the greatest abundance, and plum trees; and still higher are woods of birch, which are scanty on the southern side but very numerous on the north. Beyond the birches every thing green disappears, and the only shrub is bivona. Above all these is the region of bare lava and snow, in the midst of which the sulphur cone rises with a very steep ascent to the full height of Vesuvius, or about 3000 feet. The top of the crater, is above two miles in circumference, and, when quiescent, several hundred feet deep, pouring forth sulphureous vapour from thousands of small openings. The only perpetual snow, however, occurs in shaded crevices, above the height of 9000 feet. Sicily is not rich in metals; the mountains to the north-west of Taormina present traces of a gold mine said to have been worked at a very remote period; mines of silver, copper, lead, and iron are also mentioned. Beds of sulphur occur abundantly in the blue tertiary clay, from which Europe has long been supplied with that mineral. The blue clay also contains beds of rock salt, of which the most considerable are at Alimina, north-east of Castro Giovanni, where this substance is found both massive and crystallized. The climate of Sicily is very much the same as that of Calabria; its summers are very hot, while, on the contrary, frost is scarcely known in winter. The natural vegetable productions, and the objects of agricultural industry are likewise nearly the same. The wheat of Sicily is reckoned the finest in Europe; the vine is also extensively cultivated, and produces in some places excellent wine. The sugar cane, the custard apple, and the date, are cultivated; and the enclosures are surrounded by the American aloe, which forms an impenetrable fence. By the side of the plane, the poplar, and the willow, grow the cactus tuna, or prickly fig, the orange, the citron, the olive, the myrtle, the laurel, the carob tree, and the pomegranate; while arbutus and tamarisk abound upon the coasts. The dates of Girgenti on the south coast are said to be excellent; but at Palermo, on the north coast, this fruit is found only in gardens. Sicily was in ancient times the granary of Rome, and still possesses the same fertile soil, and the same capability of abundant productiveness; but the system of rural and political economy in the island is such, that it sometimes does not produce corn sufficient for the consumption of its own inhabitants. Wild animals are very scarce, and even sheep are almost unknown; hares and rabbits are now almost the only native quadrupeds to be met with, and even the latter are not common; but, to compensate this deficiency, there are vast flocks of water-fowl in the marshes of Leontini and Syracuse, and quails in incredible numbers pass over the island for the northward in spring. Bee-eaters, orioles, rollers, are then common everywhere, and are pursued by numerous hawks and owls. The African flamingo is not uncommon in the marshes of Syracuse, and the pelican is also an occasional visitor. The purple heron, the night heron, the little bittern, the long-legged plover, the glossy ibis, the pratincole, and several other rare European species are also among the common migratory visitors. Insects are numerous; and flights of locusts have occasionally afflicted the island. The most destructive invasion of these insects appears to have happened in the beginning of last century, when they spread devastation and ruin over the island during a period of five years. The Sicilians partake of the general character of their Neapolitan neighbours, profess the same religion, with the concomitant characteristics of ignorance and superstition, and are subject to the same ruling power. The despotic character of the government, together with the exorbitant feudal privileges of the grandees, have reduced the body of the people to the lowest state of penury; while the want of roads, or the badness of those that exist, prevents much internal communication or trade. Sicily, however, produces some wines that are esteemed by foreigners; the raw silk of the island is also fine; and these articles, with olive oil, fruits, sulphur, and salt, afford materials for exportation. In return she receives manufactured goods in great variety, though in small quantities, on account of the prevailing poverty of the people, who cannot afford to purchase anything beyond the coarsest articles of furniture and clothing.

Sicily forms a portion of the kingdom of the Two Sicilies, and possesses, in theory at least, a representative constitutional government, established in 1812; but since 1815, this has fallen into complete abeyance; and the island is now under the uncontrolled sway of the King. For administrative pur-

poses it is divided into valli or intendaneies, distriets, and communes, corresponding to departments, arrondissements, and communes in Franee. Each vallo is placed under the charge of an intendant with a council. Civil and criminal justice are administered in the king's name by conciliators, judges of circuit and instruction, tribunals of commerce and civil matters, superior courts for civil, criminal, and special adjudication, all of which are amenable to one supreme court. The judges amount to 250; the lowest class of whom, the judges of eircuit, have salaries varying from £38 to £80; the highest, those of the supreme court, receive £415 per annum, and the president of the latter £615. The property of the island was valued in 1811, when the British garrison and fleet created a great demand and high prices for the produce of the country, and that valuation has been continued as the basis on which the land and house-tax is levied. On this valuation a tax of 7½ per cent. was first raised; it was afterwards increased to 12½; and now amounts, taking togcther the former and the present value of produce, to 24, and in some cases to 60 per cent. of the produce. The nett annual revenue amounts to about £1,000,000 sterling; of which one half is transmitted to Naples. About £5000 are professedly expended in improvements; the remainder is appropriated to the officers of government, and to the maintenanee of criminal prisons. There is no country which is so highly taxed; nor is there one which derives less benefit from its government. Primary and secondary schools figure in every commune; colleges and academies are established in twenty-one towns, and in the two universities of Palermo and Catania, are 81 professors, and about 1250 students. There are besides Jesuit schools, three episcopal academies for divinity students, and boarding schools at Palermo for the gentry. Females belonging to families of distinction are educated in convents; but with all these means, the people, from the highest to the lowest, are, with few exceptions, remarkably ignorant. There are several libraries and museums of natural history at Palermo and Messina, with hospitals and other institutions for the relief of the sick, and lodging the insane. But, of all the public establishments, the prisons seem espccially to claim the attention of the government, not, however, with the view of promoting the comfort of the prisoners, but their security. The state and criminal prison on the island of Maritimo contains, perhaps, the strongest and most hideous dungeons in the world, to which the prisoners are lowered several hundred feet from the rocky height above, and are seldom, if ever, heard of afterwards. The island contains three archbishops, and ten bishops; with priests in every commune. The church is chiefly maintained by revenues from landed estates; but the priests are paid by the communes. There are 660 monasteries, belonging to twenty-one or twenty-two orders; and the number of monks has been stated to amount to from 12,000 to 15,000.

Agriculture, pasturage, fisheries, the sulphur mines, and a few manufactures, form the principal occupations of the people. The lands chiefly belong to the nobility; but, as estates are now divided by law among the children, instead of going, as formerly, to the eldest son, the princely incomes formerly enjoyed by some of the nobles have dwindled away to a third or a fourth; and, in the course of time, their estates will be frittered down to very small possessions. Owing to the oppressive amount of the land-tax, many fertile tracts remain uncultivated. Sicily is the only European country where we find numerous modern ruins, consisting of whole towns, which have ceased to be inhabited within the last century. The distribution of the land is estimated thus: — Cultivated as arable, or corn lands, 3,125,000 acres; vineyards, 115,000; vegetable and fruit gardens, 260,000; woods and olive plantations, 1,125,000; entirely waste, though nearly all fertile, 1,265,000; pastures, fertile, but chiefly waste, 1,425,000; total, 5,163,000 acres. Over the whole island the art and implements of agriculture, and the dwellings of the people, are in the most wretched condition. Indeed, were it not for the fruit of the Indian fig, which grows wild and in abundance, the agricultural produce of Sicily, once the granary of Rome, would not probably maintain two-thirds of its diminished population. It produces, however, good crops of wheat, barley, beans, tobacco, cotton, hemp, flax, &c., with scarcely more culture than scratching the surface of the ground to admit the seed. With few exceptions, the horses, mules, and asses are small and ill made; the Tunisian or reddish brown breed of cattle are large, strong, finely formed, and have generally long horns; the native or black breed are much smaller. There are many large and fine flocks of merino sheep; but the native breed is small and yields coarse wool. The goats are a tolerably good breed, and their hair is made into cloth. The swine are of a very inferior description. With the exception of the vine, a great deterioration appears to have taken place in the cultivation of fruit; the best olive trees are those which were planted many centuries ago by the Saracens. The oranges and citrons are delicious, and are collected with more than usual care. The forests have nearly disappeared; the woody region of Etna, and the woods of Caronia, on the northern mountains, consist chiefly of various kinds of large oak, elm, firs, and ash. Staves for wine easks and ship timber are imported; for, so far from being able to export any wood, great difficulty is now felt in procuring even fuel for cooking. Of the vines the black grape is the most general and abundant, though it is often planted promiscuously with the white. Except on the high grounds, the vintage usually begins in the latter half of September. The wines of Marsala, Mazzara, and the adjoining districts, are those chiefly exported. This wine is produced from a mixture of white and black grapes, to the amount annually of 30,000 pipes, of which from 18 to 20,000 are exported. Along the north coast, the slopes of the mountains and the valleys are almost entirely covered with olive trees; but on the south and west coasts, and generally in the interior, olive groves are rare, and do not furnish oil sufficient for the use of the inhabitants. Part of the east coast, north of Catania, produces the olive tree in great perfection; the olives are gathered in low situations in October; and in higher places, from October to January. Sicily produces silk in small quantities, to the extent of only about 400,000 lbs. a-year; the greater part of which is manufactured into ordinary silk stuffs at Catania. Cotton is cultivated in small patches, but very negligently; and scarcely enters into the exports. Dye stuffs, barilla, honey, liquorice, and many other articles might be cultivated to a great and profitable extent; but these are all totally neglected.

The principal mineral production is sulphur, the mines of which extend over a great part of the centre, and down to the south coast of the island. The mineral is imbedded in blue marl, but is occasionally found also in gypsum and limestone. The mines have been known and wrought for more than three centuries; but the quantity dug and prepared for exportation was unimportant, until within the last fifteen years, when the discoveries in chemistry caused an extraordinary quantity to be successfully applied to manufacturing purposes. British capital and industry were applied to its production; about 300 ships, of from 150 to 350 tons, were annually employed in the trade between Great Britain and Sicily; the capital, profit, and wages so employed amounted annually to at least £2,000,000 sterling, besides the large sums invested in buildings and the machinery necessary for working the mines. This rapidly prosperous state of things excited the cupidity of certain interested persons, who persuaded the king to grant them a monopoly of the sulphur trade, on the ostensible ground of protecting the proprietors of the mines from the bad effects of over-production. For this they were to pay to his Majesty an annual premium of 400,000 ducats; but the effect of the monopoly was almost immediately to reduce the trade to its former insignificance, to the great loss and injury of those who had embarked their capital in it. The king, however, has been recently obliged, by the threats of the British government, to recal the monopoly, and restore the trade to its former footing.

The fishery of Palermo employs from 900 to 1000 boats, with 3500 fishermen, and the produce is valued at from £20,000 to £24,000 a-year. There are twenty-two tunny fisheries, of which six are at Palermo, seven at Trapani, four at Melazzo, and five at Syracuse; each fishery employs about fifteen boats. The sword fishery is confined chiefly to the straits of Messina, and the produce is consumed

on the island. The anchovy and sardine fishery is carried on at Siculiana, where it is begun after Easter, by the fishermen of Palermo, Termini, and Cefalu, who cure and pack up the fish for exportation. The coral fishery is chiefly followed by the Trapanese, who go for the purpose to Bona in Africa; the coral is polished and worked at Trapani, and sent to Catania, Naples, Leghorn, and other places. Before 1816 the foreign trade of Sicily was chiefly in the hands of the Genoese, the Ragusans, and the French; the Sicilian vessels being then chiefly limited to the coasting trade, from the fear of being taken by the Barbary corsairs. There belong at present to the several ports of Sicily about 2250 vessels of all kinds, measuring about 43,000 tons, and employing about 25,000 men and boys. — *(Report of the Commercial Statistics of the Kingdom of the Two Sicilies, by J. Macgregor; presented to Parliament, August* 1840.)

Sicily is divided into seven valli, or intendancies, as stated in the following table:—

Intendancies.	*Cities and Towns.*
Palermo, ...	PALERMO, Monreale, Corleone, Termini, Cefalu, Bisacquino.
Messina, ...	MESSINA, Milazzo, Patti, Mistretta, Randazzo, Taormina, Castroreale, Lipari.
Catania, ...	CATANIA, Aci Reale, Mascali, Paterno, Bronte, Nicosia, Caltigirone.
Siragosa, ...	SIRAGOSA *(Syracuse)*, Agosta, Noto, Spaccaforno, Ispica, Modica, Scicli, Ragusa, Comiso. The islet Marzamene.
Caltanisetta, . . .	CALTANISETTA, Leonforte, Mazzarino, Terranova, Piazza, Castro Giovanni, Pietra-Perzia.
Girgenti, ...	GIRGENTI, Aragona, Palma, Naro, Mussomeli, Sciacca, Sambucca, Alicata, Cannigati, Catolica, Bivona. The islands Pantellaria, Linosa, and Lampedosa.
Trapani, ...	TRAPANI, Monto Giuliano, Castelamare, Alcamo, Calatafimi, Salemi, Castel Vetrano, Mazzara, Marsala. The islands of Favignana, Maretimo, Levanso, &c.

PALERMO, the capital of Sicily, is a large and fine archiepiscopal city, agrecably situate on the northern coast, in a luxuriantly fertile and well-cultivated plain, named La Conca d' Oro (the golden shell), which is enclosed on three sides by mountains, and opens on the nortb to a spacious bay. The houses are all flat-topped, and, instead of windows, have balconies with glass doors; the streets are well laid out, and almost all terminate at two of the principal thoroughfares. Several fine public buildings, seven squares, and fine walks, the best of which is the *marina*, lying along the shore, a university, and several other literary establishments, an active commerce, and 130,000 inhabitants, entitle Palermo to rank among the principal cities of Europe. The fete of St. Rosalia attracts every year in July, an immense crowd of people from all parts of the island, and gives a great stimulus to the trade of the city, which is otherwise very considerable. *Monreale*, an archiepiscopal city, west of Palermo, has a royal college, and 18,000 inhabitants. *Corleone* has a royal college and 12,000 inhabitants. *Termini* a fortified seaport town on the coast, east of Palermo, has a royal college, a nautical seminary, and celebrated mineral waters, with a population of about 11,000. *Cefalu*, an episcopal city, with 9000 inhabitants, 40 miles east of Palermo, has a harbour, a school of navigation, considerable fisheries, and trade. In its neighbourhood are some Cyclopean remains.

Messina, a large and fine episcopal city, with an industrious and commercial population of 85,000, possesses the finest harbour in the kingdom, and one of the best in Europe, and occupies a delightful situation on the west side of the strait to which it gives its name. The city has been rebuilt since 1783, when it was almost entirely destroyed by an earthquake. It has a citadel, and is otherwise strongly fortified; and its environs are the most densely inhabited, and the best cultivated part of the island. The exports are oil, currants, raisins, wine, almonds, lemons, sumach, and other produce of the island. *Taormina*, 30 miles south of Messina, a small town, in a beautiful situation on the coast, contains a Roman theatre, cut in the rock, a naumachia, a cistern, and an aqueduct; it maintained against the Saracens a siege of 80 years' endurance. *Catania*, a large archiepiscopal city, with wide and straight streets, and a good harbour on the eastern coast, stands at the foot of Mount Etna. It has suffered severely from earthquakes, but nevertheless still contains the remains of an amphitheatre, larger than the Colosseum at Rome, and other Roman antiquities. It contains a university, a lyceum, a public library, a museum, and other literary establishments. The silk stuffs of Catania rival the best in the kingdom; the population amounts to about 40,000. *Aci Reale*, N.E. of Catania, a clean and well-built town, stands on streams of lava, and contains 14,000 inhabitants. *Bronte* gave the title of Duke to the celebrated Lord Nelson, but his estate, to which the title was attached, has been, since his death, completely destroyed by the eruptions of Etna, at whose base it is situate. *Siragosa*, a fortified episcopal city on the east coast, with 14,000 inhabitants, a large natural harbour, a royal college, two seminaries, a library, and a museum, stands amidst the ruins of the ancient *Syracusa*, which cover a space of 20 miles in circumference, and of whose five magnificent and populous districts, the small island of Ortygia is the only one now inhabited. Its harbour, formerly one of the finest in the Mediterranean, was long believed to be so choked with sand as only to admit chebecks or brigantines, till Lord Nelson proved the contrary, in 1798, by sailing right into it with his ships of war and frigates, and finding excellent anchorage. The celebrated fountain of Arethusa which flows through the town in a stream 4 feet deep, has become turbid and muddy, and is now used for washing the clothes of the citizens. *Agosta*, the ancient *Augusta*, to the north of Syracuse, is a small fortified city, in a delightful situation, with a harbour, and 10,000 inhabitants. *Noto*, a finely situate and well-built city, with 13,000 inhabitants, four miles from the shore, and 17 miles S.W. of Syracuse. *Caltanisetta*, a large well-built inland town, with 16,000 inhabitants, 60 miles S.W. of Palermo.

Girgenti, an irregularly-built episcopal city, on the south-west coast, is situate on a hill, 1100 feet above the sea, not far from the shore, where it has a harbour. It has some fortifications, and about 15,000 inhabitants. In its neighbourhood, at Girgenti Vecchio, are the remains of *Agrigentum*, consisting of the Temple of Concord almost entire, the Temple of Juno, and the ruins of the Temples of Ceres, Proserpine, Hercules, Apollo, Diana, Castor and Pollux, Esculapius, and the Olympian Jupiter, the last of which was never finished, but was constructed with enormous columns 120 feet high. The pier of the harbour of Girgenti has been built from the ruins of these magnificent temples. *Aragona*, a small town with 6000 inhabitants, 6 miles N.E. of Girgenti, is noted for its picture gallery, its antiquities, and the singular mud volcano of *Macaluba* or *Mocaluba*, in its neighbourhood. Here, on a level surface, are numbers of scarcely perceptible openings, from which at regular intervals, and with a hissing sound, little explosions of gas burst; while, at the same time, a white and very delicate marly slime wells out, and flows in a sluggish stream. *Castro Giovanni*, a large town, with 11,000 inhabitants, and a royal college, is situate on a high mountain, almost in the middle of Sicily, in the locality of the ancient *Enna*, so noted for the rape of Proserpine, and for the magnificent temple of Ceres, who was worshipped there. *Sciacca*, 32 miles W. of Girgenti, a little seaport town, is built on a green hill, amidst a profusion of cactus; off which, at the distance of about 20 miles, a volcanic mount rose from the sea to a considerable height in 1833, and soon afterwards disappeared, leaving only a bank in its place.

Trapani, a busy commercial fortified town, with a royal college, a tribunal of commerce, and 24,000 inhabitants, built on a peninsula, at the western extremity of Sicily. Its inhabitants are largely engaged in fishing coral, part of which is carved into necklaces, and exported even to India, by way of

Alexandria. The Trapancse are also expert carvers in ivory, alabaster, amber, mother-of-pearl, &c. *Marsala*, a large seaport town, about 20 miles S. by W. of Trapani, has a royal college, and 21,000 inhabitants. Its harbour is encumbered by sand, but its celebrated wines furnish an important article of export. There are here six wine establishments, four British, and two Sicilian; three of the British are on a large scale, and have from 8000 to 20,000 pipes in annual deposit; the fourth, recently established, only requires time to be equally extensive. The wines have only come into repute since 1802, when they were introduced by Nelson, for the use of the British fleet. *Castel Vetrano*, 28 miles S.S.E. of Trapani, with 13,000 inhabitants, is noted for its coral articles, its alabaster works, and particularly for its vicinity to the remains of the ancient *Selinus*, where are still to be seen enormous heaps of ruins, which the people of the country call the pilieri de Giganti (Giant's pillars.) In the midst of a pile of ruins resembling massive rocks, rise several gigantic columns, of the same style of Doric architecture as those of Segesta and Girgenti; while many others lie in confusion on the ground. *Alcamo*, an archiepiscopal city, with a royal college, and 18,000 inhabitants, 25 miles west of Palermo. In the neighbourhood is the site of the ancient *Ægesta*, called also *Egesta*, *Acesta*, and *Segesta*, where is a temple in very good preservation; but everything else is reduced to a mass of shapeless stones and rubbish. *Mazzara*, a small city, with narrow, ill-paved, and dirty streets, surrounded by a Saracenic wall, on the south-west coast, has a considerable trade in exporting grain, pulse, cotton, wine, fish, fruit, barilla, madder, oil, and soap.

Malta, Gozo, Comino.

This group of islands is situate in the Mediterranean sea, between 35° 45′ and 36° 6′ north lat., and 14° 9′ and 14° 35′ east long., about 63 miles S.W. of Cape Passaro in Sicily, and extends in a line from north-west to south-east, a length of 28 miles, divided by two straits which are separated by Comino, the central island. Malta, the largest, is of an irregular oval figure, about 16 miles in length by 8 or 9 in breadth, and is composed of calcareous rocks, which slope like an inclined plane from the level of the sea towards the south and east, where they attain the elevation of nearly 200 yards. The surface is composed of small valleys, defiles, and hills, which extend across the breadth of the island. In most places the rock is entirely naked, except where the hand of industry has placed over it a layer of travelled earth, brought originally from Sicily and other places. Gozo, the most northerly, is more elevated than Malta, and is entirely surrounded with perpendicular rocks, the highest of which are to the west and south, where they are very steep. The surface is not so uneven as that of Malta, and is consequently more easily cultivated; the pasture land is good, and great numbers of cattle are fed on it for the use of Malta. The grapes of Gozo are peculiarly fine, and are highly esteemed by the Maltese. Cotton and grain are cultivated with success; the air is particularly salubrious, and the country presents many agreeable prospects. Comino is a small island, two miles in length, between Malta and Gozo, and partakes most of the character of the latter. The two channels which it forms have from 12 to 20 fathoms water, and are safely passable by the largest ships in mid-channel, in which, too, there is good anchoring ground of fine sand. The greater part of the land in Malta is planted with cotton. It also produces wheat, barley, and a grain called tommon, which grows in the poorer soils, sometimes mixed with wheat, and sometimes with rye. Both Malta and Gozo produce fruit of exquisite flavour, with excellent roots and very fine odoriferous flowers; cummin, aniseed, laricella, and a lichen which grows on the rocks exposed to the north, and is used for dying an amaranthine colour. Gardens are numerous in Malta, especially towards the east, which are generally ornamented with orange and lemon trees; the greatest attention is paid to them, and they are commonly watered twice a-day from cisterns hewn in the rock, with trenches dug round about to collect the rain. Bees are kept in great numbers; the honey is delicious, and remains always liquid. There are numerous asses of a strong breed; the sheep are very prolific, and exceed 12,000 in number. About six or seven thousand beeves are also maintained, and five or six thousand horses of all kinds. But, besides the food produced from the soil, there are several hundred boats employed in the fisheries, for the daily supply of the markets. In August and September a fish is caught resembling the dolphin, which is called at Malta the lampoukeag. The climate is delightful; the four seasons are regularly defined, and the country is remarkably salubrious. The Maltese are a mixed race, principally Italian and Arabic. Their language is, like themselves, an Italiano-Arabic dialect, intelligible to the natives of the opposite shore of Africa; but pure Italian is used by the mercantile and higher classes, and English, which is the language of government, is generally understood in some degree by the natives. The Maltese are a robust, active, and temperate people; but, from want of employment, are still very poor, wasting their energies in idleness. Their condition has, however, been greatly improved since they became British subjects, by the opening up of new sources of industry, and some of them have become the best sailors in the Mediterranean. They are bigoted catholics, and very superstitious and fanatical; but education is spreading, and will by and by modify their character. The population of Malta in 1836 amounted to 106,614, being 1122 24-95ths to the square mile; that of Gozo to 16,534, being 612 10-27ths to the square mile. The total value of imports in that year amounted to £685,531, and of exports, £367,942. The shipping inwards, 1,963 vessels, with a burden of 199,500 tons; outwards, 2083 vessels, burden, 216,267 tons. The capital of the islands is *Civita Valetta*, on the north-east coast, built upon a tongue of land extending into a bay, so as to form a splendid harbour on each side, where also the projecting points are occupied by towns and forts; the city itself and the suburbs being surrounded by impregnable fortifications, parts of which are cut out of the solid rock. The streets of Valetta are narrow and steep; but it contains some splendid buildings, which still attest the magnificence and the devotion of its former masters, the Knights of St. John, to whom the island was gifted by the Emperor Charles V. after they had lost Rhodes, and was possessed by them till 1798, when they were dispossessed by the French. Valetta surrendered to the British in 1800, after a two years' blockade, and was confirmed to Britain by the peace of 1815. The *Civita Vecchia*, or old town, is situate nearly in the centre of the island, and is called by the natives *Medina* (i. e. the city); it is an episcopal see, and contains a large cathedral, besides several other churches. It stands on so high ground, that in a clear day the whole islands, and the coasts of Sicily and Africa, may be seen, both at the distance of about sixty miles. The catacombs are very extensive, and of great celebrity. The island contains besides, twenty-two casals or villages. Near the western part of the north coast is the *Calle de San Paulo*, or haven where St. Paul is said to have landed after his shipwreck; though some critics consider the island of Meleda on the Dalmatian coast, to be that on which the Apostle was cast. Gozo contains six casals or villages, two castles, and a fortress on a rock of 300 yards in diameter, in the interior of the island.

For